

Rock Products

DEVOTED TO
Concrete and Manufactured
Building Materials

Vol. IX.

CHICAGO, ILL., DECEMBER 22, 1909.

NO. 6.

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We are the largest distributors of Portland Cement, Lime Plaster, Fire-brick and General Building Material in the Southern States, and have stocks of Standard Brands at all of the Atlantic and Gulf Seaports, and at our interior mills and warehouses, for prompt and economical distribution to all Southern territory. Write for our delivered prices anywhere. Also Southern agents for the "Dehydratine's" waterproofing material. "Universal," "Acme" and "Electrod" Brands Ready Roofing. Get our prices.

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Join Agents SAMUEL H. FRENCH & CO. Philadelphia



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Manufacturers of the Celebrated

MOUNT SAVAGE FIRE BRICK GOVERNMENT STANDARD.

DEVOTE a special department to the manufacture of Brick particularly adapted both physically and chemically to

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ESTABLISHED 1841.



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MAKERS OF Leather Belting

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FOR
DAMP
PLACES



ALMA Portland Cement STANDARD BRAND OF MIDDLE WEST.

Specially adapted to all Reinforced Concrete and High-Class Work.

ALMA CEMENT CO.
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How do you figure your Lime Kiln, Rotary Cement Kiln and other furnace expenses and charges for Refractories? By the cost of the BRICK, or by the length of the service they will give?

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SILICA
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A PERFECT RECORD FOR TEN YEARS IN ALL KINDS OF CONCRETE WORK

Send for 72 page Illustrated Catalog No. 25

MARQUETTE CEMENT MANUFACTURING CO.
Marquette Building, Chicago



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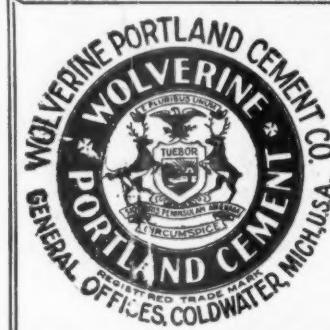
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1,250,000 Barrels Annually

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"THE BEST THAT CAN BE MADE"

"Chicago AA" Portland Cement is best adapted for use in making concrete because of its absolute uniformity, fineness, prompt hardening and attractive color. "Chicago AA" is second to none, and every barrel is fully guaranteed to meet the requirements of the Standard Specifications.

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Building Materials

Volume IX.

CHICAGO, ILL., DECEMBER 22, 1909.

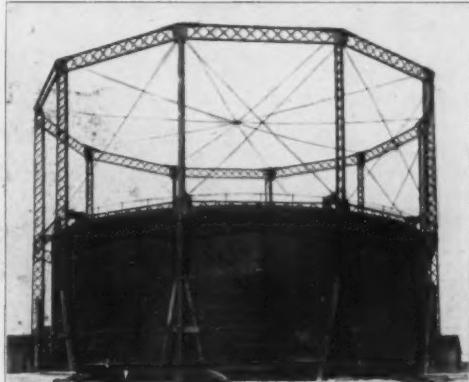
Number 6.

Municipal Gas Holder of Concrete.

Interesting Experience in Making Over Successfully a Concrete Job that Was First Put in Carelessly.

Messrs. Lucius E. Allen, C. E., of Belleville, Ont., and Edward B. Morrill, C. E., of Toronto, Ont., early last spring undertook the reconstruction of a gas holder for the municipality of the little city of Kingston, Ont. The job was originally put in more than two years ago, and was very unsatisfactory and well nigh a total failure, on account of the leakage, which continued to grow apace, so that the holder had to finally be abandoned, as it was no longer able to hold the water necessary to seal the steel cap which constitutes the receptacle for holding carbon monoxide in storage for the lighting and heating purposes of the community.

The whole case is interesting not only for the many different experiments which were tried out and found wanting before a perfect water tank was made, but because it demonstrates very clearly how great a wrong can be perpetrated through the application of false economy and lack of competent supervision in important concrete work. This tank was built originally in the summer of 1907, being of the two lift steel holder type, having a capacity of 150,000 cubic feet, and is approximately thirty-two feet in diameter by twenty-five feet in depth. The steel work was built by Davis & Farnum Company of Waltham, Mass., and was a very satisfactory piece of steel work. The excavation was made in a crumbling limestone formation, and although the specifications called for a depth of 25' the holder (25' high) protruded above ground six or eight feet when the job was completed. The specifications called for a circular concrete wall of about 24" thickness to the ground level. This concrete wall was laid by a local contractor and was given a heavy coat of coal tar and resin, which was allowed to soak in before the tank was filled with



GAS HOLDER AT KINGSTON, ONT.

water. In the fall of 1907, after the wall was allowed to have seasoned, the water was turned in and an immediate leakage of about 23,000 gallons per day ensued. This necessitated a large, continuous supply of water into the tank and was extremely expensive, and early in the spring of 1908 the city commissioners decided to suspend the use of the holder and have an examination made. The examination disclosed that the concrete had been poorly proportioned, the mixing had been insufficient and apparently no care had been used in selection or grading of the aggregate mate-

rials. It was then decided to apply tarred felt to the original wall, and arrangements were made to conduct experiment No. 1 in waterproofing the tank. This was done by applying three layers of tarred felt with a coating of No. 4 pitch between each layer, covered with a cap sheet, making a four-ply covering for both the sides and bottom. In addition to this a four-inch layer of 1-2-4 concrete was laid all over the bottom. The tank was then placed in commission, and while the leakage was somewhat reduced, a four-inch stream of water from the city main was still necessary to keep the water up to the required level. As this was too expensive and somewhat dangerous on account of the tendency of the water to undermine the tank in places (in which case a 24" wall would not be strong enough to withstand the 24' head of water), it was decided to again take the tank out of commission and to either demolish the old substructure or, if possible, reconstruct it so as to reduce the leakage to a minimum. Several suggestions were put forward at this time, as follows:

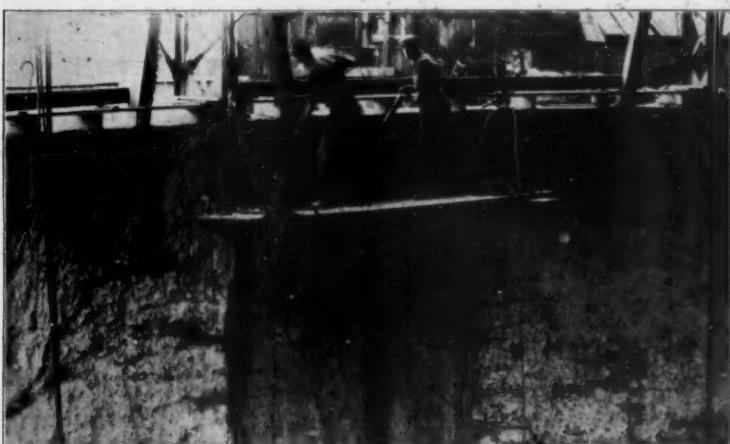
First—Take off felt and rack walls to a rough surface so that a new coat of cement and sand (2-1) of $\frac{1}{2}$ to $\frac{3}{4}$ of an inch in thickness be trowelled on.

Second—Take off felt, roughen surface, erect wooden forms and a 3" surface wall of concrete be placed against the old wall.

Third—Leave paper on and line with brick (4") embedded in the concrete.

Fourth—Put in steel lining with a 3" lining at bottom, the flange to be covered with a good strong mixture of concrete.

(Continued on page 42)



AIR CHISELS IN OPERATION, REMOVING 4 INCHES OF CONCRETE.

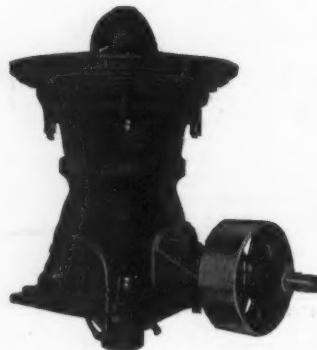


PRELIMINARY METHOD OF APPLYING MORTAR. DARK STREAKS SHOW LEAKAGE.
WATERPROOFING THE GAS HOLDER AT KINGSTON, ONT.



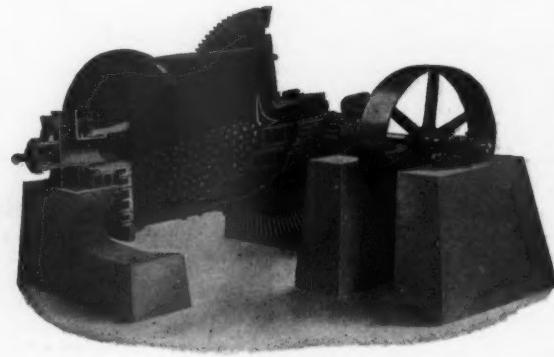
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The Mammoth has 27-inch, 36-inch and 42-inch openings—
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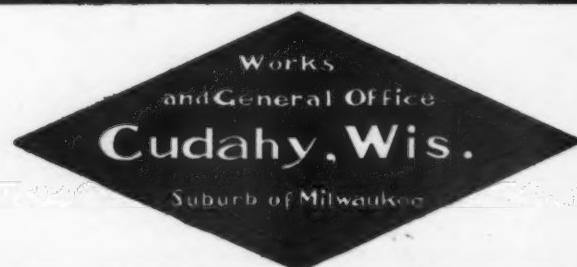
We make also the latest types and varying sizes to suit conditions of

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Tell 'em you saw it in ROCK PRODUCTS

Hydrated Lime

Bulletin 31

The opportunity for the betterment of concrete construction is so evident that every person interested in the subject whether architect, engineer, contractor or layman cannot afford to miss being posted on the advantages of hydrated lime as a means of improving all kinds of cement mixtures. It is not expensive, and by its simple application, the difficulties that have so long beset cement work may be effectually mastered.

If you are an ARCHITECT, you strive to overcome the dull gray color of concrete, and to make it pleasing to the eye. Hydrated lime will do this for you, and it won't cost you any more either. A small proportion in the aggregate noticeably whitens the color of construction and besides imparts to it a toughness that eliminates the brittle texture developed by cement alone.

If you are the ENGINEER, planning a concrete bridge or a retaining wall, you wish it to be strong and permanent as well. To be permanent, it must be waterproof. Hydrated lime will accomplish this for you. Instead of depending upon foreign substances to accomplish this purpose, isn't it reasonable to argue that the practical way is to make the concrete itself so dense that water cannot penetrate it? This is just what hydrated lime does. It fills the voids and small air holes left by the evaporation of the water in the aggregates and completely seals the concrete against the entrance of all outside moisture. It actually increases the strength of all cement mixtures, which harden in air, by preventing them from drying out too rapidly and restores the cement to its normal hydraulic state with maximum of strength augmented.

If you are the CONTRACTOR, it costs you valuable time and money to do the very thing that hydrated lime will do for you by itself. You can use hydrated lime in cement mortars. It is as easy to use as the cement itself and costs you nothing extra to incorporate it in your mortar. For the fact of the matter is, hydrated lime is cheaper than cement. You can actually substitute nearly half of the cement with hydrated lime and still get a mortar that is twice as strong and infinitely easier to mix and trowel. Three times as many brick can be laid in the same time with a cement lime mortar made out of hydrated lime. In heavy concrete construction, the aggregates are more easily made and placed in the forms when hydrated lime is employed. The Hydrate overcomes the frictional tendency on the part of the cement, thus allowing the fresh concrete to be more densely pressed together, with a great deal less effort. Then you get the result you are after too. That is a water proof job.

If you are a CEMENT BLOCK MANUFACTURER and are trying to reduce the cost and improve the quality of your artificial stone, you will find that hydrated lime will solve the problem for you. It makes cement blocks whiter, harder, tougher, cheaper and waterproof. All this is what you have been racking your brains to find the way to do. Now that we have told you the secret, it is up to you to get busy. Do some experimenting. The man who reads this can make up his mind that it is based on established facts. For prominent engineers and chemists have already demonstrated what a valuable addition hydrated lime is to cement construction. The ideal condition is reached when hydrated lime is used, because it waterproofs and increases the strength, improves the appearance and facilitates the working of cement concrete, and the best part of it is that not a cent of additional expense is incurred, while in many cases the cost is actually reduced. We suggest that you store this information away and act on it the first chance that presents itself. If you do, insist upon getting a superior grade of material from a manufacturer with improved machinery and modern methods, as not every hydrated lime is adapted to this purpose or capable of producing satisfactory results.

OUR BUSINESS is the designing and constructing of hydrating plants to make this up-to-date product. We have the only process that has proved successful in hydrating High Calcium and Dolomite Limes. We have been connected with the construction of over 40 plants, no two of them alike; every one built to meet local conditions. While our prices may seem high as compared with others, we only, with our experience, are in a position to contract and install a plant for you GUARANTEEING Definite Results. We GUARANTEE where others Promise.

It requires about 4 months to build a plant. Why not take this matter up now and get ready for next season's business?

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is the accepted standard of highest efficiency, economical operation, positive results and general all around serviceability in hydrating machinery.

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They have proven their merit under all conditions.

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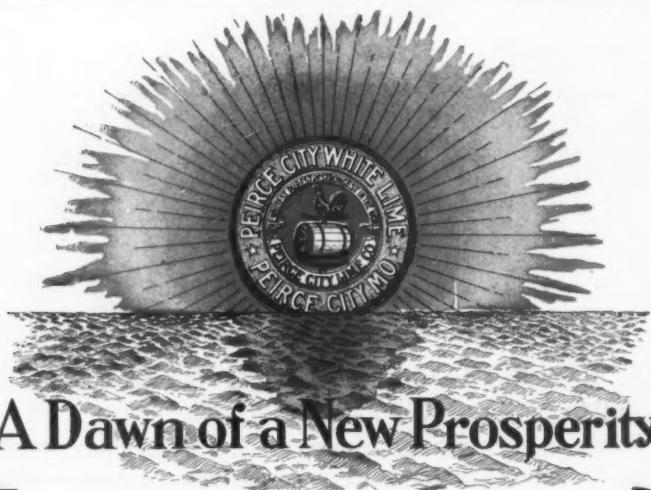
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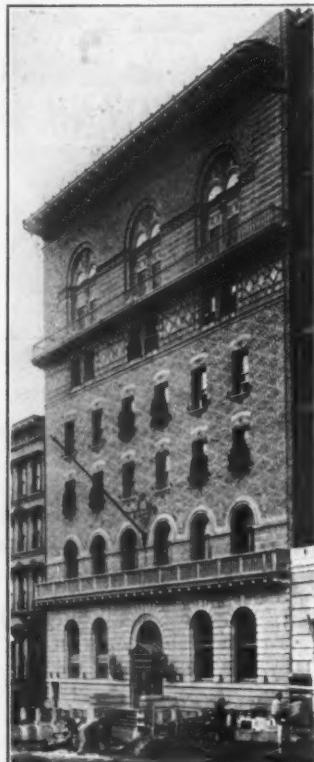
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Beautifies and waterproofs brick and concrete surfaces.

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This compound makes concrete impervious to water.

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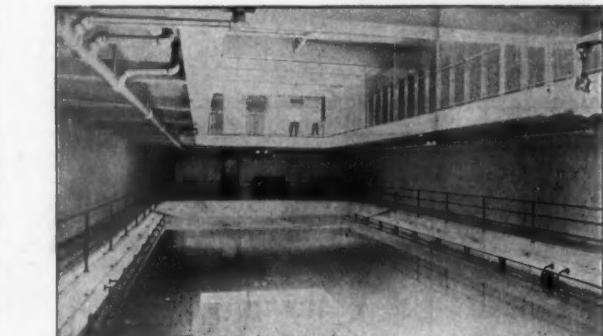
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Makes all Concrete Watertight
It Is Not a Wash

Write for pamphlet describing its use. Do not accept a substitute, as there are many adulterated compounds on the market.



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Pool, floors, steps and walls surfaced with Medusa Pure White Stainless Portland Cement, containing Medusa Waterproof Compound.

Sample of our Pure White Portland Cement sent on request.
Obtain our price on Medusa Portland. Annual Capacity 1,500,000 bbls.

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MR. CONTRACTOR—
MR. ENGINEER—**

WHEN you want a coating for concrete that *will not destroy the desirable distinctive texture of concrete*, will give perfect satisfaction, will not chip, flake nor peel off, but will become a part of the material itself and will absolutely protect your stucco or concrete construction against the ravages of dampness as well as give it any tint you desire, apply **BAY STATE Brick and Cement Coating**.



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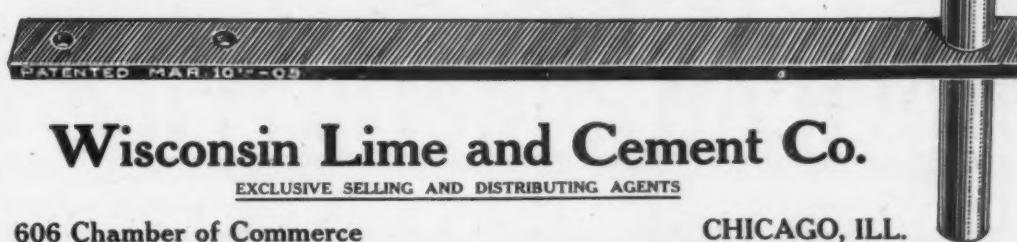
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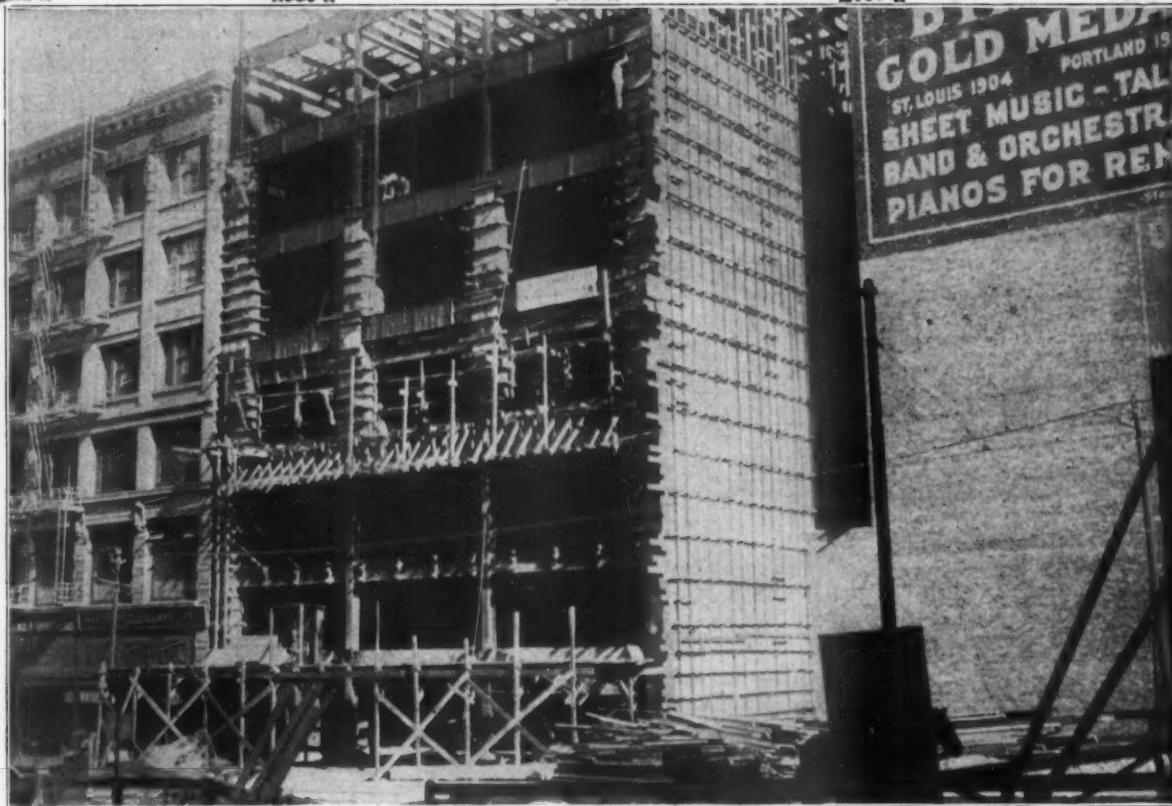
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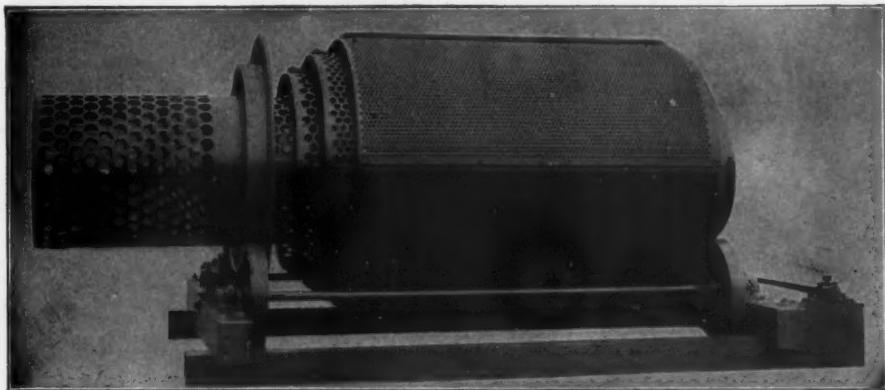
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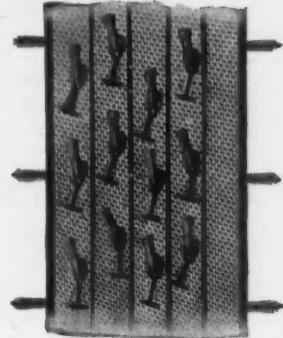
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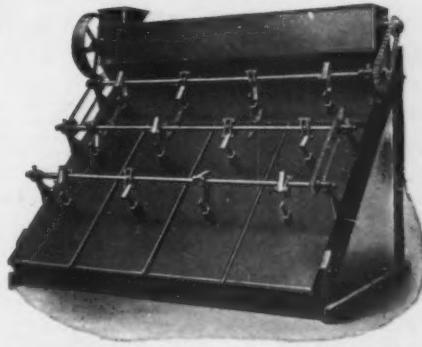


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The Strongest White Lime on the Market. Used and recommended by Sand-Lime Brick Manufacturers, Chemists, Soap and Glue Works, Plasterers and Masons.

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Sole Manufacturers of **LIMATE** The first and best Hydrated Lime in the market.

In tensile strength for stone and brick laying and adhesive strength for plastering **Limate has no Equal!**

The thirteen lime plants of
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Have a total lime producing capacity of 10,000 barrels daily

Distributors of Best Portland Cements and Masons' Building Materials. Correspondence respectfully solicited

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MANUFACTURERS OF THE

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Well known throughout New York and the Eastern States as the finest finishing lime manufactured. The special feature of this lime is its quick and even slacking, thus preventing any cracking or checking when put on the wall. It is the best lime used in the country today for all

HIGH GRADE FINISHING WORK

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The Ohio and Western Lime Company

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Our Dump Cars are used on most of the large rock and dirt moving operations throughout the United States and Canada.

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 Page 53, for
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The Best for Every Purpose where Chemically Pure Lime Is the Indispensable Element

Sand Lime Brick Difficulties can be Simplified and Overcome
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Cement Blocks can be made more waterproof, cheaper, and of lighter color by the use of from 20 to 40% of pure hydrate, free from magnesia. This substitutes the same amount of cement and does not impair the strength of the block.

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Specialist in designing, constructing and operating Gas Producers, Furnaces and Kilns
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Longest experience and greatest success in PRODUCER GAS FIRED SHAFT KILNS
 for burning lime, dolomite and magnesite.

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SAVE MONEY, TIME AND LABOR
 USE
Monarch Hydrated Lime



If Monarch Hydrated Lime wasn't better or cheaper than lump lime nobody would buy it. As a matter of fact it is both.

Monarch Hydrated Lime costs less delivered, can be thoroughly soaked in twenty-four hours, doesn't have to be screened, carries more sand, gauges with a third less plaster, spreads further and easier and will not air slack.

That's the whole story. Now try it. Compare the cost and the results with those of ordinary lime—and we have a new customer.

Monarch Hydrated Lime is made in Carey, Ohio, where the limestone is just right and the shipping facilities good. Our prices will satisfy you.

We also crush stone for all purposes.

THE
National Lime & Stone Co.
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PATENT SOAPSTONE FINISH
 PLAIN AND IN COLORS FOR WALLS AND CEILINGS

Patent Soapstone Mortar

Prepared in any Color for Laying Pressed and Enamelled Brick, Stone Fronts, Terra Cotta, Chimneys, Fire Places, Etc.

The Dodge Blackboard Material or Artificial Slate.

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SOAPSTONE MICA. CONCRETE DRESSING.
 CRUSHED, GROUND AND BOLTED SOAPSTONE.

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WEST, AND SOUTH

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For Full Particulars Address

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I. C. R. R. CO.

No. 1 PARK ROW, CHICAGO

IN THIS WAY

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NATIONAL MORTAR & SUPPLY CO.

MANUFACTURERS OF

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Ground Lime :: :: :: Fertilizer Lime

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Gas Process for Burning Lime.

Four and three quarter pounds of lime to one pound of coal on a large output is now being secured every day.

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For Crushed Stone and Silica Sand Quarries, Contractors, Stump Blasting, Ore and Slag Shooting, Clay and Shale, Oil and Gas Wells, Etc.

Safer and Better Than Dynamite. Does Not Explode by Overheating. No Illness.

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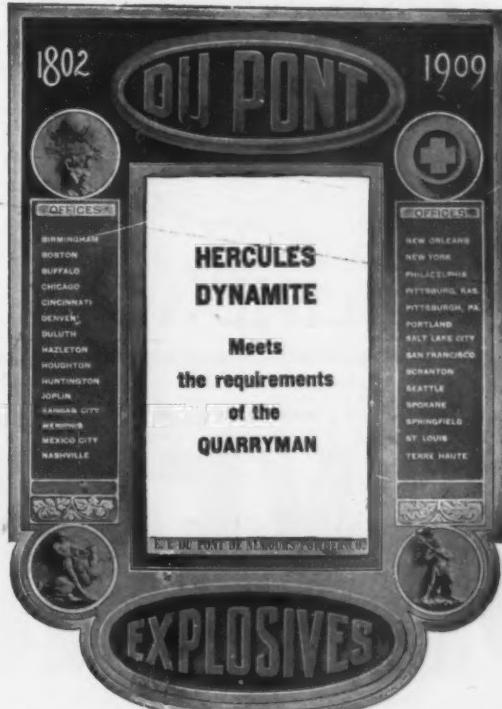
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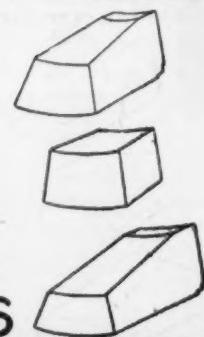


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IRONTON CROWN.



GROUND CLAY
FOR
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BOILER SETTINGS

DIRECT HEAT

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—FOR—

BANK SAND
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All Mineral, Animal and Vegetable Matter.

We have equipped the largest plants in existence and our dryers are operating in all parts of the world. Write for list of installations and catalogue S. C.

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NEW YORK

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The Cummer Continuous Gypsum Calcining Process

See Other Advertisement, Page 67

THE F. D. CUMMER & SON CO.,
Cleveland, Ohio

Seven plants in successful operation producing about 1,500 tons per day.

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Staves, Hoops and Heading for Lime,
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The most secure fastening in concrete as well as in stone.
Send for Samples.

H. FARRINGTON, 45 BROADWAY, NEW YORK

MR. JOHN L. WHEAT,
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Company, Louisville, Ky.,
manufacturers of lime and
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supplies; under date of October
30th, states: "I value
ROCK PRODUCTS very highly.
I think that it is the
best of its class with which
I am acquainted.

C. K. WILLIAMS & CO.

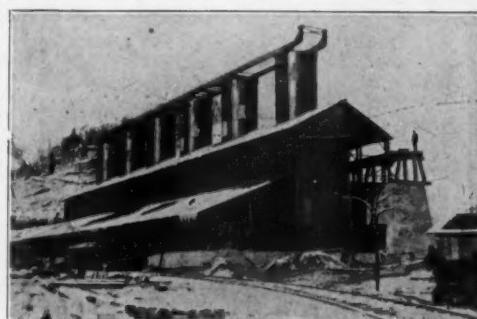
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BRICK AND MORTAR COLORING

OF ALL SHADeS

CORRESPONDENCE SOLICITED. SAMPLES AND ESTIMATES
CHEERFULLY FURNISHED ON APPLICATION.



Lime Kilns and Plant of Blair Limestone Co.,
Canoe Creek, Pa.

Designed by
Henry S. Spackman Engineering
Company

42 N. 16th Street Philadelphia, Pa.

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ROCK PRODUCTS

ESTABLISHED IN LOUISVILLE, KY., 1902.

DEVOTED TO CONCRETE AND MANUFACTURED BUILDING MATERIALS.

Volume IX.

CHICAGO, DECEMBER 22, 1909.

Number 6.

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THE FRANCIS PUBLISHING COMPANY

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HENRY C. WHITTAKER.

BERNARD L. McNULTY.

Communications on subjects of interest to any branch of the stone industry are solicited and will be paid for if available.
Every reader is invited to make the office of Rock Products his headquarters while in Chicago.
Editorial and advertising copy should reach this office at least five days preceding publication date.

TERMS OF ANNUAL SUBSCRIPTION.

In the United States and Possessions and Mexico.....	\$1.00
In the Dominion of Canada and all Countries in the Postal Union.....	1.50
Subscriptions are payable in advance, and in default of written orders to the contrary, are continued at our option.	
Advertising rates furnished on application.	

Entered as second-class matter July 2, 1907, at the Postoffice at Chicago, Illinois, under Act of March 3, 1879.

Equipment economies in the sand business have created a great industry which will continue to expand in importance. It is growing necessarily as a local proposition almost parallel to the remarkable consumption of Portland cement.

The men who handle building materials in the big cities and smaller towns of the United States are now looking over the business record of 1909. By long odds it is the biggest year that many of them have ever experienced in spite of the bad start at the front end of the active season.

The American Association of Manufacturers of Sand Lime Products at its recent Buffalo convention proved its title to the distinction of being an organization with the right stripe of progress in its system by adopting standards of quality for its product and making it obligatory upon every member to make standard goods.

The annual meeting of the American Association of Portland Cement Manufacturers, recently held in New York, was the best attended meeting in the history of that organization. In spite of the tremendous growth of consumption from year to year regularly reported there is a pronounced dread of overproduction which would not benefit anybody. The members feel closer together than ever before, and cement as usual occupies the center of the stage.

Rock crusher men, the natural road builders, are awake to all the interest that is being taken in road improvements in every part of the country. The perfect type of road has not yet been developed. It is an extremely complex problem both from the standpoint of first cost and the possibilities of the results obtained. No matter what turn the specifications may ultimately take it is reasonable to calculate that the product of the rock crusher will continue to furnish the great bulk of the road making material.

Christmas brings up to all of us the sweet memories of days long gone when our antecedents played Santa Claus as we do it now. With our hearts full of beatitude we feel no older in spite of gray hairs or bald pates, and find that pure happiness is not to be measured by the customary rules that we use every day in the world of trade. The nearer we can put ourselves into the condition and attitude of little children the closer we come to the Kingdom of God which is inside of our own bosoms. We hope that every member of our whole circle of readers will be able to enjoy a brimful measure of the goodness within that keeps us living on and keeps not the count of passing years or changes. Remember you are only a little child—overgrown and clumsy—but if you try you can get natural.

Lime burning in days of yore was a local farmer's job periodically, and in some isolated regions perhaps some such idea of the lime industry still prevails. Nevertheless there has been a mighty change going on during the past six or seven years, and it is now rapidly approaching completion. The ancient wasteful methods have to a very great extent given way to large manufacturing establishments. It has been found that lime burned in the little, old-fashioned kiln with forty to fifty bushels capacity per day is at once much more expensive and not nearly so good as lime burned under right conditions and with intelligent control. It costs more to make a small fire hot enough to produce lime than it does to raise such a heat in a large furnace and maintain such heat continuously to produce a big output. This change is in keeping with the progress of the age—it is inevitable, and its parallel can be found in every industry. The little pot kiln making lime that costs more than a dollar a barrel has gone forever, and the man is silly who harks back to it. Probably no other influence has been more efficacious in turning on the searchlight of intelligence in these kind of things than the National Lime Manufacturers' Association, composed of the foremost men in the industry, who have achieved success by the application of intelligence in their business undertakings.

No thinking man can observe the matter of fire losses and fail to appreciate the most important development of the concrete industry. Taken solely as a business proposition, the absolute elimination of the fire loss to commerce is a tremendous gain. There are plenty of successful examples now to fully demonstrate that fire damage need no longer be considered as a factor in future building projects. The man who deliberately assumes this gamblers' chance in the building that he erects for any commercial purpose can no longer be considered a good business man. He is widely recognized as a back number, or his motives viewed with suspicion by those who are intelligent and abreast of the times. Since this viewpoint is now well recognized and formed into the settled, fixed opinion we shall have no more commercial fire traps as a natural result. In the matter of homes, tenements and farm houses comes the all important feature of safety to human life in addition to property loss. This is a topic, gentle reader, which might well be made to ring from every rostrum, every pulpit, every school house in this land. Since people are inclined to be so remiss in matters that touch them nearest it is necessary for every good citizen who knows to tell his neighbors, as many of them as possible, that the fireproof home no more costly than a firetrap has been achieved and can be had by every American who insists upon it.

The improvement of American internal waterways is the one movement that has the unanimous support of all intelligent people who realize the full importance of providing adequate and economical transportation facilities for the future commercial development of this country. The Rivers and Harbors Congress is the public expression of the leaders of the movement, and their deliberations are working out the great problem in the best available way. We can only consider that detracting critics of the various details of the organization and plans proposed are "interested" in preventing or obstructing the progress of this necessary work of improvement, no matter whether it be the president, the speaker of the House, or others in high or low position in politics or other business. Perhaps one definition of statesmanship is becoming obscure in these latter days of intense concentration. To set into expression and administer the will of "the people" was the first type of American statesmanship which wove together a mighty nation in the face of tremendous opposition out of the just and right ideas of a people who stood for their rights to the death. The real statesmen of this day are probably unknown to a great extent and "the people" are beginning to realize this fact. No matter what regulation or reorganization is worked out by the railroads or for the railroads, the improved waterways of the Atlantic and Pacific seaboard together with the Mississippi system will be indispensable long before they can be completed and made available. Without transportation independence there can be no independent commerce.

EDITORIAL CHAT

A merited promotion was made by W. F. Cowham recently in making Charles L. Johnson general sales agent of the Southwestern States Portland Cement Co. at Dallas, Texas. Mr. Johnson is one of the best known cement sales managers in the country. For years he was connected with the Castalia Portland Cement Co. at Sandusky, Ohio, and while there was prominent in state politics. He was the first secretary of the sales manager's branch of the American Association of Portland Cement Manufacturers. Realizing the great possibilities of the western country, Mr. Johnson decided to affiliate with the industry there, and became the assistant sales manager of the Western States Portland Cement Co. at Kansas City, Mo. Mr. Johnson readily adapted himself to his new surroundings when he moved to Kansas City and took hold of his new work as few men can and with the rare ability which he possesses. That he "made good" is demonstrated by his promotion to a larger field. Mr. Johnson makes friends readily and easily, and those who come in contact with him cannot fail to appreciate his wholeheartedness.

The Southwestern States mill is the largest in that territory, and Trinity brand cannot otherwise but be largely known and distributed under the efficient management of Mr. Johnson.

Jas. W. Wardrop, the energetic secretary of the National Builders' Supply Association, is ever on the jump. Recently he organized the retail dealers of New Orleans in a local association, then went to New York to attend the meeting of the cement manufacturers. Besides his many engagements he is preparing the program of the coming convention to be held at Chicago.

E. L. Williams, manager of the Mt. Shasta Volcanic Hollow Tile & Cement Co., at Igerna, Calif., has lately been entertaining J. W. Ellis, of Hamilton, New Zealand, who was in Chicago a few weeks ago, and is now in California on his way home. Mr. Ellis, on the Coast, as in Chicago, expresses himself as being convinced that the Pauly process for making structural tile is the most worthy thing he has seen in the concrete industry, and is confident it will be a winner in New Zealand as well. Mr. Williams, as usual, will be an interested visitor at the Cement Show in February.

A ROCK PRODUCTS man had the pleasure of a hearty hand clasp and an enjoyable visit with Mr. Kimball, of the Wadsworth-Howland Co., in Boston the other day. This company produces a first-class cement coating, and not only is it realizing a rapidly increasing business in this line, but is receiving many complimentary letters from all parts of the country from customers who have used it. It has also recently received large orders for its product from Havana and Panama.

W. B. Hill, president of the Ash Grove Lime and Portland Cement Co., Kansas City, spent a few days in Chicago this week. Mr. Hill was on his way home from the cement manufacturers' meeting at New York.

"Trials of Sand Lime," is the Anglicized title of a book by M. E. Leduc, chief of the section of building materials at the Laboratory d'Essais du Conservatoire des Arts and Metiers, Paris. M. Leduc has been assisted in the preparation of the work by M. Ch. de la Roche. In this work the authors pass in review, with their personal experience added, all the causes appertaining to the manufacture of sand lime bricks, such as the influence of sand and lime as quantities and species, the influence of damp, steam pressure, the duration of such pressure, etc.

The work contains 120 pages, closely printed, comprising 38 tables showing thousands of experiments and trials and descriptions of fourteen manufacturers of France, England, Germany and Holland visited by the authors.

This book may be obtained by mailing an international post office order of 15 francs (\$3) addressed to the "Administration de la Revue des Matériaux de Construction, 148 Boulevard Magenta, Paris."

President Henry Rotier, of the Perfection Concrete Block Co., Milwaukee, had an experience in court recently, when he was closely examined as to his qualifications as a juror in the Hedger murder

case. The presiding judge wanted first-class men only on the jury, and Mr. Rotier was one of those summoned.

A. J. Armstrong is now on the selling force of the Plymouth Gypsum Co., Fort Dodge, Ia. He is a brother of L. E. Armstrong, the well-known president of that company, and is looking after the Illinois trade, making Chicago his headquarters.

A. R. Black and F. J. Griswold, of the American Gypsum Co., Fort Clinton, Ohio, were in Chicago last week. Regarding trade, they said it was quiet now, as building operations in their section were nearly at a close. "Hopeful," is the way Mr. Black put it when speaking of 1910.

F. W. Farrington, manager of western sales for the United States Gypsum Co., was at the home office in Chicago last week. Mr. Farrington has just been out to the Western coast, and says business has been great there. When at home, which is only once in awhile, he is at Minneapolis, but everyone knows what a hustler Farrington is, even with his large staff of salesmen.



CHARLES L. JOHNSON, GENERAL SALES MANAGER SOUTHWESTERN STATES PORTLAND CEMENT COMPANY, DALLAS, TEXAS.

Harry L. Wells is again associated with the Power and Mining Machine Co., at Cudahy, Wis., in charge of the publicity department.

Homer Sly, general manager of the Northern Lime Co., Bay Shore, Mich., was in Chicago the early part of the month. Mr. Sly reports that his company is bringing to a close a very successful season.

T. F. McLaren, general sales manager of the Western States Portland Cement Co., Kansas City, Mo., has, on account of ill health, resigned his position. He has been succeeded by E. R. Stapleton, formerly with the Iola Portland Cement Co., at Kansas City.

New Yorkers Buy Pennsylvania Plant.

GLEASTON, Pa., Dec. 17.—The plant of the Dover Fire Brick Co. has been taken over by men from Troy, N. Y., who have absorbed most of the capital stock to the amount of \$150,000. The plant has had an output capacity of 30,000 bricks a day, but under the new control it will be enlarged and its product greatly increased. The directors of the new company are William C. Geer, William Sleicher and H. S. McLeod, of Troy; Frank D. Halstead, of Lockhaven, Pa., and Irving Gleason, of Gleaston, Pa., a member of the old company. The officers of the new company are: William C. Geer, president; William Sleicher, vice president; Harry S. Sleicher, secretary and treasurer.

Chicago Company Orders a Crusher.

OGLESBY, Ill., Dec. 20.—The Chicago Portland Cement Co. has placed an order with the Power and Mining Machinery Co., of Cudahy, Wis., for a No. 42 crusher.

Want Fireproof Building for Records.

SOUTHAMPTON, N. Y., Dec. 18.—Public-spirited men of this town advocate the building of a fireproof structure in which to keep the town records, some of which date back to 1640 and are in good condition.

Bankrupt Accuses a Supply Co.

LYNN, MASS., Dec. 18.—William O. Hadley, a salesman, has filed a voluntary petition in bankruptcy, showing liabilities totaling \$46,501, with no assets. There are notes and bills amounting to \$40,650, which Hadley says ought to be paid by others. Included in these notes is one for \$30,000, which the petitioner claims should be paid by the Hadley Cement Co., of this town.

Report of Cement Users' Convention.

Proceedings of the fifth annual convention of the National Association of Cement Users, held January 11-16, 1909, at Cleveland, have been issued. The 700 pages of good solid reading matter contain a lot of highly instructive information. It has first class indexing and very elaborate illustrations. There never has been a report of a convention published that excels it for general interest and instructive value.

Curious Accident in Cement Mill.

NEWAYGO, MICH., Dec. 20.—Four workmen in the boiler room of the Newaygo Portland Cement Co. narrowly missed blowing themselves to eternity on the afternoon of December 4 by a friendly battle with coal dust. While they were throwing the stuff at each other a furnace door was opened and the dust went off like dynamite. Abner Roebuch, an oiler, will die as the result of his injuries. He was on top of the boilers oiling the crusher which reduces the coal to dust before it enters the furnace.

INCORPORATIONS.

Illinois Cement Construction Co., Springfield, Ill., \$25,000 capital; to deal in lime, cement, gravel, stone, brick, asphalt and other paving materials; incorporators, Charles G. Winetree, James A. Hall, Ernst F. Helmle and Edward F. Irwin, all of Springfield, Ill.

Marshall Concrete Construction Co., Jersey City, N. J., \$100,000 capital; to manufacture concrete materials and ingredients, building materials, etc.; incorporator, William Hutchinson.

Southern Concrete Products Co., Washington, D. C.; \$2,000,000 capital; to manufacture and sell concrete and similar products; incorporators, William A. Kennedy, Charles H. Galliher, Clarence T. Kingsbury, Frank L. Averill and Fred Drew, all of Washington.

International Klinch Tile Corporation, Alexandria, Va., \$200,000 capital; officers, B. G. Smith, president, Washington; A. D. Montier, vice president, Alexandria; E. H. Taggart, secretary and treasurer, Washington; Frederick P. Russell, local attorney.

Bagley-McDonnell Brick Co., Middletown, Conn.; \$10,000 capital; incorporators, E. S. Bagley, J. J. McDonnell, and Agnes McDonnell, all of Meriden, Conn. This company will also deal in clay products.

Zanesville Floor and Wall Tile Co., Zanesville, Ohio; \$10,000 capital; incorporators, W. W. Harper and others.

Southwestern Cement Co., Okeene, Okla.; \$50,000 capital; incorporators, T. J. Connelly, J. H. McCalum, E. E. Gressler.

William E. Dee Clay Manufacturing Co., Illinois, will do business at Mecca, Ind.; \$100,000 capital; W. E. Dee president.

FIRE AND ITS LOSSES.

Time for Builders to Awake to the Necessity of Employing Concrete Construction.

It is a very noticeable fact that the record of fire losses is carefully concealed from the eyes of the public to a great extent. True, the daily papers of the country give a local attention to this important matter, but the information is not presented intelligently to the masses of the American people. We have frequently in the columns of *ROCK PRODUCTS* called attention to the greatest achievement of the age, which has been accomplished by the concrete industry in introducing the only known means for the entire elimination for all time of fire losses and fire danger, and this at last is becoming generally accepted in the business world.

No longer can any commercial structure be designed that amounts to a fire trap without the owner being viewed with suspicion and his motives questioned. We seldom see any prominent structure devoted to commercial purposes where the fireproofing element is not well considered. This has been demonstrated so often in every part of the land that there is no longer any liability for the builder to be misled. The practical economics of every such case will take care of that for all future time, because the fire losses in commerce are put down on the balance sheet at the end of the year, and they make the kind of figures that any intelligent business man will steer clear of in his future investments.

For this reason concrete warehouses, concrete stores, concrete office buildings and hotels will continue to be the invariable rule in future constructions where the builder thinks anything of his reputation for level-headed business acumen and intelligence.

A far more important question is that of the safeguarding of the homes of the people. Of these buildings fully 90 per cent are of the flimsiest type of frame construction, and anyone who will give even slight attention to the matter will be appalled at the enormous loss of human life, in addition to the loss of money, which attaches to the burning of American homes.

Our readers have had their attention called to this matter so many times that we really fear that the subject may become threadbare, but it should never be an uninteresting one to those who are acquainted with the more recent achievements of the concrete industry whereby the construction of homes perfectly safe from fire, danger to life, and financial loss is assured. We state without fear of competent contradiction that it is today quite as cheap to build a home by one of the two or three distinct types of construction which have recently been developed by the leaders of thought and practice in the concrete industry as to build in any other way.

It is significant that fire losses in the homes of the American people is no respecter of persons. Within the scope of a single month the palatial home of the governor of the great state of Massachusetts, a number of New York tenements where numbers of families reside, the little cot of the villager, the home of the farmer, and the residence of the merchant are visited impartially with the one awful terror against which mankind has fought in vain for centuries, and which is now conquered by the concrete industry.

A Few Examples.

Here are a few items taken from the record of the past month. At Butler, Mo., on the night of November 23, the home of David A. DeArmond, a member of the national congress from the state of Missouri, was destroyed by fire, and Mr. DeArmond and his little grandson, five years of age, lost their lives in the flames. The house was a very large frame structure similar to thousands of such homes scattered in all parts of this land. There is no explanation as to the origin of the fire beyond a mere surmise, and yet in the brief space of ten minutes a sumptuously furnished home was reduced to ashes and the life of a great statesman was blotted out along with that of a hopeful youth very dear to him. It is said that the congressman could have escaped, but returned to the room where the child slept in order to save the boy's life and thereby sacrificed his own. Here is a man who could well have afforded any type of structure for his home that taste or judgment might suggest. In all the achievements of his life and its brilliancy, David A. DeArmond utterly failed in this one duty—the providing of a safe home for his family, and he paid more than the extreme forfeit of his negligence and oversight.

On the night of December 9 the thrifty little city of Kalamazoo, Mich., was swept by flames. The fire originated in the leading hotel of the town, and the retail business district was practically wiped out.

The insurance losses as reported amount to \$750,000, but the actual losses to real losers will amount to more than a million, and this may not be replaced during the span of the present generation. Will they rebuild without due regard to safety from fire damage, or will they absorb the lesson that the only means of fire protection is to build of concrete construction? This matter has been prominently brought to the notice of the citizens of Kalamazoo. If they replace their city with the so-called slow-burning construction, which on the night of December 9 allowed the city to be destroyed between midnight and dawn, then the choice of their future fate on some similar occasion will be on their own heads.

Perhaps we have never related a more touching story than that of the burning of the home of Charles Corrode, which was located on Constance avenue, in South Chicago. The house was a one and one-half story frame structure, and had been built very cheaply, according to the means of the man, for the comfort of his little family. He and his wife are thrifty and early risers. They left the house on the morning of December 20 to perform some work in the barn and in the little yard. They had left a kerosene lamp burning in the room where their three children, aged respectively 7, 4 and 2 years, were still asleep. They had been absent from the room no more than ten minutes when the wife was startled to see smoke and flames issuing from one of the windows. She called her husband and they ran with all possible speed to save the lives of their children, whose screams and cries they could distinctly hear in the midst of the seething mass of flames. Before it was possible to even summon the Chicago fire department, which is perhaps the most efficient in the United States, the home was reduced to a few handfuls of smoking ashes, and the first policeman to arrive, not thirty minutes from the time the fire was discovered, removed the little charred bodies of the three children who were sacrificed to the Moloch of conventional ideas of cheap building in the matter of the homes of the humbler class of thrifty citizen.

There is no doubt that this man could have built his home with the same money so that this disaster would have been impossible, if he only had the proper information upon this important subject. The conventional idea of building in such instances is actually criminal, and those real estate organizations, financial institutions, contractors and others who permit the uninformed to provide such homes with the money that they have earned and saved are *particeps criminis* in what may properly be considered the shame of the present age.

The columns of this number of *ROCK PRODUCTS* would not be sufficient to merely record the list of similar fire losses and similar tragedies that have transpired in the past month, all of them easily within the reach of prevention.

Is it possible that our readers do not recognize the responsibility of spreading this information so that such construction will be abandoned as one would turn away from a reptile? Is it possible that the manufacturers and the men who distribute fireproof building materials, and who are interested in concrete construction, do not see the possible opportunity presented in the investment of money in buildings, knowing as they do the full facts in this important matter.

While it may be impossible to replace at once every structure now standing, it is altogether beyond the bounds of reason, nay improvident, that in future building we should invite the one great calamity that has threatened and destroyed mankind in all the dark ages of the past.

Concrete construction is a development of civilization which has become indispensable. It is intimately associated with the very life, happiness and prosperity of the individual, and it is the duty of every one who knows these things to assist in the campaign to have each and every builder, especially the home builder, know that the first requisite is to make homes safe from fire damage, or danger to life, from fire, and this can only be accomplished by the systems, methods and materials which the concrete industry has developed, and is prepared to furnish at every possible market in the length and breadth of this land.

Madness Reigns in San Francisco.

"Whom the gods would destroy, they first make mad."

Unmindful of the awful lesson contained in the destruction of the city, three years ago, the men who are rebuilding San Francisco have proceeded upon lines which invite a second appalling disaster. Immediately after the great fire, when the entire population was practically houseless, there was a reason for the erection of temporary wooden and other similarly combustible structures. The madness, the criminality, of those in charge of building operations in

the Golden Gate City lies in allowing these inflammable buildings to remain in use after all excuse for their existence has passed away. It required such a lesson as that given by the destruction of the St. George hotel, a ramshackle frame structure, in the burning of which six lives were lost, to arouse the authorities to tardy action.

Such action as has been taken, however, refers only to the demolition of wooden buildings used for hotel purposes. San Francisco is full of frame structures equally dangerous. Why not make a clean sweep and demolish all of them? The most inexcusable thing about their retention is the fact that many of them were erected after all excuse or need for them had passed, and when laws against construction of this kind were in force.

Somebody has blundered. Who is it? Members of the Board of Public Works, which body has supervision of building operations in San Francisco, say the buildings were mostly erected without their personal knowledge, or the issuance of permits. If this is the case, then it is plain that the members of the Board are neglecting their duty, and are unfit for the positions they hold.

With the awful fire of 1906 fresh in mind, it might be taken for granted that sensible men engaged in building operations would find it to their interest to employ non-inflammable materials to the greatest possible extent. In the erection of the more important office buildings, business blocks and public structures, this has been done, a great part of the construction being in stone or concrete. There is, however, a large amount of tinder-box construction still tolerated. It is in this that indubitable signs of madness are shown.

Aside from any question of duty or obligation towards one's fellow man, leaving out of consideration the item of obeying the law and thus avoiding fines and similar expenses, purely selfish reasons alone should be sufficient to impel all owners to insist upon solid, fireproof construction. It should not be necessary for architects and contractors to argue its advantages. Every man who invests his money in building operations, and who takes the trouble to advise himself as to conditions, knows that in the end concrete construction is by far the most economical. Concrete buildings last longer than those of frame, cost much less for repairs and maintenance, and the expense of insurance is lowered to a marked degree.

So well is the subject understood by insurance men that they are now taking steps to secure the adoption and enforcement of laws which will permit only of first-class fireproof construction. And this is being done from a purely selfish standpoint—in an effort to lessen the fire losses of \$220,000,000 a year which the companies now have to pay. One of the direct effects, however, will be to benefit the owners of properly constructed buildings by making the insurance rates materially lower. This is shown by the action of the underwriters in voluntarily reducing rates in all instances where material improvements are made tending to reduce the risk of conflagration. One would think that this in itself would be enough to prompt even the dullest of men to build sanely, but the Mammon of Greed possesses many of them to such an extent that they are blind to their own best interests.

Verily, "Whom the gods would destroy, they first make mad."

Lower Freight Rates on Brick.

CLEVELAND, O., Dec. 18.—A decision has been given by the Interstate Commerce Commission pronouncing the freight rates on brick from the Central Traffic Association territory to the Atlantic seaboard to be unreasonable and requiring that the railroads shall not hereafter charge more than twenty-one cents a hundred pounds upon brick no matter of what material made. An action was originally started by the Stowe-Fuller Co., of Cleveland, against the Pennsylvania railway, charging discrimination in the rates upon fire clay brick, and contending that a brick should be a brick in the fixing of freight rates. The matter was then taken up by the national association, which includes practically all the manufacturers of paving and fire clay brick in the Central and Eastern states. The new rate takes effect February 1.

Looking For Pottery Clay.

PLUM CITY, WIS., Dec. 17.—Three experts from Red Wing, Minn., have inspected the pottery clay beds six miles north of here. These men represent the Red Wing Pottery Co. and are looking over the country and examining the clay along the head waters of Plum creek with a view to either establishing a pottery there or shipping the clay to the pottery at Red Wing.

National Rivers and Harbors Congress

President Taft's Views Presented in His Speech to the Convention. President Randsell Tells of Work to Be Done and Legislation Necessary in Bringing About Success.

The National Rivers and Harbors Congress began its work at Washington, D. C., Dec. 8. The convention was opened with prayer by the Rev. George Alexander, of New York. President Taft gave the opening address, in which he said:

I don't know that I have any right here to talk upon waterways unless it makes a man an expert on the subject to have gone down Mississippi river. The dangers to which one was exposed on that journey by reason of its shoals and other obstacles and the temptation of that journey certainly afforded an opportunity for careful study and deliberation—the morning after.

I think I am sufficiently a resident of Washington to make what I have to say an address of welcome. I am delighted that you selected Washington as your place of meeting. You have chosen wisely; first, because when you want a thing done it is well to be close to the man who is to do it; secondly, Washington is always a good place to come to, and you can induce the ladies of the family to come with you, which always assures a mixture of pleasure with business.

I congratulate your convention on having brought the subject of waterways to such a point that representatives in Congress from one end of the country to the other recognize it as one that calls for action. They have not come to a definite conclusion as to the policy to be adopted, but they have come to the conclusion that some policy must be adopted with reference to the waterways so that they afford ample transportation facilities not only for certain classes of goods but for the controlling of railroad rates. You, in your declaration, say you are in favor of the policy and not in favor of any particular project. I think that was a wise platform to make, and yet when it comes to the practical enforcement and accomplishment of anything you have got to get into projects. You may insist that a policy ought to be adopted, and you have insisted upon it, and I do not doubt but that you have made that distinguished member of Congress who is head of the rivers and harbors committee to sit up nights to devise a policy to satisfy the demand that has arisen in such enormous array the country over.

National and Sectional Inclinations.

One has to travel all over the country to find out how much one does not know about it, and to find out what the people are thinking about it. You go into the Northwest and find the development of the Columbia is one of the great projects of many who live in that neighborhood. You go into far distant Texas and you find that they have an inland waterways project reaching down into Louisiana and the bayous of the Mississippi down along to the Gulf, and that has demonstrated its usefulness as a part, and that only needs further addition and improvement to carry out a great system of waterways there that shall reach farms and plantations at present far beyond the reach of any railroads. And so, as you come to the eastern shore of the country, you find the inland, and I do not know quite why they call it inland exactly, but it is the inside waterway, the project fostered by the Atlanta Deep Waterways Association.

It is well that in every part of the country is a project of that sort to awaken the interest of those who live there, for while we are all patriots and while we are all in favor of all of the country we are just a little more intensely in favor of that which is nearest than we are in favor of that which is very far away, and the danger to this movement, the test of the value of the movement, is going to be seen when you get off that very safe platform that you are in favor of—a policy and not of a project—and get down to the business of pushing projects.

Profiting By the Past.

One of the things that I think we ought to do is not to decry the past. It is wise to take from the past that which is valuable and build upon it. The trip down the Mississippi river was an eyeopener to many of us. The work which has gone on at the end of the river and near its mouth and up along the banks of the Mississippi and in Louisiana and up into Arkansas is a work that commends itself to everyone who sees it. It is work both in the preservation of the farms and in the establishment of a great waterway. The work which has been done by the government through its corps of army engineers in strengthening the banks of that river is a work of experimentation, but work which has demonstrated the possibility of treating that river in such a way as to hold the banks and keep the river within them and to insure a reasonable depth where steamers can go.

The Nine-Foot Channel.

Now, I don't think I betray a secret when I say that the gentleman who has most to do with the initiation of projects in Congress is fully charged with the necessity of doing something in the next Congress to foreshadow or, rather, to begin, a policy with respect to those rivers. You have the Missouri, the upper Mississippi, the Mississippi between St. Louis and Cairo, and the Ohio between Pittsburgh and Cairo, all of them satisfying the requirements that you have to put in your platform with respect to the improvement of the waterways. That is an improvement in the heart of the country, an improvement that reaches to more states than any other improvement that can be mentioned in this entire country. It affects not only the states along whose borders the improvements will be made but it affects all the states along the borders of the Mississippi beyond Cairo, for the project will also include and must include the investment of a sufficient amount of money to keep the 9-foot stage always between Cairo and New Orleans. I am aware that there are a great many gentlemen in this country who are in favor of something more than nine feet between Cairo and the Gulf, but you have got to get nine feet before you get fourteen. When you once get into operation that system that I have outlined, so as to show the benefits that can be derived from it, what will go on thereafter no man can foresee. The truth is that the engineers will tell you

that after you have harnessed the Mississippi river by protecting its banks no man can tell what the depth of that river will be made by the river itself confined within reasonable banks. In other words, what I am urging, what I am laboring for, is something practical in the way of a moderate project in order that you may go on and gradually develop a larger project than that which was in your minds at its initiation, but that you do something practical by taking the materials that you have, and, as you go on and as the business increases, demonstrate to those in the country who are not so near to that improvement its advantages to the entire country in the reduction of railroad rates and in the actual transportation of that kind of business that the river will attract.

The Bonding Proposition.

Now, speaking to this assembly—I think it was this assembly—we have so many congresses in favor of so many good things that sometimes there is a little difficulty in distinguishing, and when you all meet together in Washington at the same time there is danger of mistaken identity as to associations—but, at any rate, a year ago President Roosevelt and I were together on a platform before the Conservation of Resources convention, I think it was, in which we both advocated the issuing of bonds in order that a project for improving waterways when begun should be completed in a reasonable time. Now, I am still a consistent advocate of that theory. I believe that the government is entitled to as

say that in your whole experience you have never met men of a higher standard of character, of a higher devotion to public duty, and of greater skill in their profession than these same army engineers. They are selected from the first ten or the first five of the graduates of West Point, and they have a little ring in the army which I might betray to you by reason of some inside information. If a class comes out to that which has not developed very good material in the way of engineers and mathematicians somehow or other the chief engineer advises the secretary of war that for that year they do not need any particular addition to the corps, and so it is that they have acquired a greater proportion of the mathematical and engineering ability of those who graduated from West Point than they really were entitled to. They have gone on, and with but one exception their record is clear in the honesty, and I had almost said the severity, with which they have expended the government's funds, and have seen to their being put into material at a cost which was an honest cost.

Dependence Upon Army Engineers.

But it has been said that they were crotchety; that at times they did not apparently watch the sound of progress; that they were slow sometimes in the building up of improvements. I am not prepared to say that those criticisms with reference to individuals were not well founded. You can not take a great corps like that, numbering as it does a great many officers within it, and not find men who fall to keep up with the procession; but I am very sure from talking with General Marshall and with a number of other men at the head of the corps that they are fully charged with the increasing interest in this country among the people and among the business men in the development of the inland waterways and that you could not have a safer body of men to advise you than the army engineers.

I count it one of the great good fortunes of this country when the country had to build the Panama canal that after using the great ability of civil engineers we finally settled down upon the army engineers to carry that project through.

A Source of Reliance.

So it is with respect to the waterways. They have recommended to the chairman of the waterways committee in the House a system of improvements that I believe will meet the judgment of this convention, if it be moderated to the possibilities of what can be accomplished. I think you can secure upon the statute books of this country a declaration in favor of continuing contracts to build the four or five projects which the engineers have recommended in such a way that even if you do not get the bonds voted at first if the time arises when the revenues will not permit their use—I mean the current revenues—to continue that work with reasonable rapidity you can move upon the government for the issuing of bonds. I would make the fight for bonds when the conditions strengthen the argument in their favor. It is a strong argument that you will have to meet: that if you are going to issue a large amount of bonds just for the purpose of putting them into the waterways as their necessity may develop them there is a temptation to extravagance. Perhaps it is my judicial experience, but I always feel as if you ought to shape your policy in order to win, not according to the enthusiastic suggestions of your imagination but in order to overcome the obstacles that you are likely to encounter in winning the end which you seek.

And now, ladies and gentlemen, I am very much obliged to you for giving me such attention. I realize that what I have said comes from the lips of a mere tyro, but it comes from one who has some temporary responsibility in respect to the matter and from one who is thoroughly in sympathy with the general object which you seek here—the development of all the waterways of this country by a general policy in such way as to reduce and control railroad rates and in such way as to stimulate upon the bosom of the waters the transportation of such merchandise as is peculiarly fitted to that character of carriage.

PRESIDENT RANDSELL'S ADDRESS

Hon. Joseph E. Randsell, president of the National Rivers and Harbors Congress, then addressed the convention and said in part:

You have assembled here from every part of the Union without regard to section, political belief or business interest for the purpose of voicing your sentiments on a question that intimately concerns every citizen of the republic—the question of transportation as affected by improved waterways. A small but resolute band met at the Arlington hotel in January, 1906, and those who were present then are delighted at the marvelous growth evidenced by the general voice of the press in advocacy of our policies, and by this splendid assemblage of the leading men of the United States. We advocated then, as we do today, a broad, comprehensive, businesslike policy for improving every meritorious watercourse in the land without mention of special projects; and we insisted then, as we do now, upon the necessity of an annual rivers and harbors bill carrying an appropriation of at least \$50,000,000 to be expended in the prompt execution of such projects as have been approved by the engineer corps, which sum is fully warranted by the magnitude and importance of the interests involved. Our united forces have become a mighty power, actuated by the patriotic determination to improve all our waterways and make them what nature's God intended they should be—the cheapest of all freight carriers and the best of rate regulators. Much has been accomplished and many are beginning to study and understand this subject, but the battle is not yet won, and if we divide our strength and grow selfish the result is most uncertain.

Improvement A Necessity.

We must carry on the fight with unrelaxing energy and make the people who elect the congressmen and



HON. JAMES E. RANDSELL, OF LOUISIANA,
PRESIDENT OF THE CONVENTION.

state legislators understand that water transportation is much cheaper than rail for heavy, low class, bulky articles; that a well improved system of rivers and canals along our seaboard and interior, standardized as nearly as possible so that freight can move to and from any part of the Union without breaking bulk, would furnish admirable facilities and prevent the freight congestion which caused such heavy losses three years ago and which threatens to recur; that while nature has given the United States many fine waters, they have been sadly neglected by our national government, which took control of them in 1796, and it will require a large expenditure properly to improve them; that we have given railroads a free hand in the past without any restrictions whatsoever and in many instances their unfair methods have destroyed water commerce, and that most of the terminals on water courses, which should be for the common use of all transportation agents by land and water, are owned by one or more railroads and used for selfish interests with scant regard to public welfare.

This situation must be changed and will be as soon as the people demand it. It is the duty of the friends of waterways to see that the demand is made immediately and strongly. Let us work together for that end and forget our local interests until our national lawmakers have adopted the broad, comprehensive policy for the improvement of the nation's waterways advocated by us. We must insure the success of that policy by an annual appropriation of \$50,000,000, secured by an authorized bond issue of fifty millions a year to be used when current revenues are not available. Let us bend every energy to induce interested communities, cities and states to secure for the public use suitable terminals on all navigable waterways and make them as perfect as human ingenuity can devise. And let us protect our water courses from improper rail competition by adequate state and national laws, to the end that this great natural resource may be used to assist in solving our transportation problem, the simplifying of which means increased growth and prosperity to every community in the nation.

The People's Title to Public Domain.

The terminal situation is so important that an additional word is permissible. It is eminently unfair for any corporation to monopolize a water front and shut out its competitors from access to the water given by nature's God to all the people, reserved by special statute over a hundred years ago for all the people and improved by Congress for public use. This is wrong and should be remedied by having the public resume its title under power of eminent domain. And in future appropriations for improving any water course Congress should insist that the state or city to be benefited must acquire and hold for common use sufficient terminal facilities. A striking illustration of a community's wise foresight in the preservation and use of its terminals is found in New Orleans, the metropolis of my home state and the South. She has recognized the value of her magnificent water front and still owns the major portion of it, on which are splendid public wharves and docks. She also owns and operates a belt line railroad which connects with every ship and railroad entering her portals, and in many respects her terminal situation is perfect.

President Randsell discussed the proposed issue of \$50,000,000 in bonds each year, which he favored, talked of the slow manner in which the work has been carried on in the past, and finally took up the question of the attitude of the railroads with reference to the proposed rivers and harbors development. He said:

Attitude of the Railroads.

Another important subject for this convention to consider is the attitude of our great railways toward a broad, liberal policy of waterway improvement. From close observation and the best obtainable information, I fear many of our leading railway men are unfriendly to this movement and, while not in active opposition, they are either totally indifferent or quietly antagonistic. In my opinion, this is a great mistake on their part, and it would be much wiser for them to espouse actively the cause of improved waterways. A slight study of the subject will show that nearly all of our great cities and large centers of manufacturing and business are on navigable water courses and receive the benefits of water competition in cheapened freight rates and increased facilities; and yet it is in these localities that the railroads do their most remunerative business. If our great river systems were improved thoroughly so that navigation thereon was first class, freight rates would be much cheaper, but there would be such a large growth of population and business of every kind, the cream of which would go to the railroads, that they would profit very largely thereby, and as a business proposition it would pay them to have the waterways fully developed. Many of the best paying roads in the Union parallel the improved waters, as, for instance, those adjacent to Long Island sound, the Hudson river and Erie canal and the Great Lakes. The aphorism that competition is the life of trade applies to railways with as much force as to commerce, and they would surely benefit by healthy water competition.

After touching at some length upon government ownership of railroads and its relation to the immediate subject under consideration, Mr. Randsell concluded as follows:

It thus appears that the leaven of government ownership is working in many parts of this hemisphere, though nothing like so general as in Japan, in Europe and in the new Caucasian states of Australasia and South Africa. As a good friend of railways, which I consider the most marvelous agents of civilization and progress on earth, I sound this note of warning and earnestly insist that the strongest weapon of defense against this undesirable situation is the best possible transportation system for the entire Union of combined, interdependent and friendly railways and waterways; and I urge the friends of these two great agencies to unite their forces and secure in the near future this end so much wished by every lover of the republic.

Raising Funds.

Senator Chamberlain, Oregon, said this is not academic discussion but is a practical problem. This improvement is absolutely essential. It is of no use to apply for appropriations; there has always been a

deficiency in the past whenever the subject came before Congress, and the case is more so now. We must have a bond issue to carry the matter to a successful issue, just as has been done with the Panama canal project. The people are now educated up to the point where they think a bond issue the proper thing. The speaker thought the President favors a bond issue now, just as he did a year ago and as former President Roosevelt did. The success of this movement will mean greater power for the Interstate Commerce Commission. He believed in a "Do it now" policy.

Committee Appointments.

The following appointments were made on the committee on resolutions: Hon. Joseph N. Teal, of Oregon; F. A. Copeland, Wisconsin; Thomas W. Smith, Washington. William B. Stillwell, of Savannah, Ga., resigned all official positions.

The Congress continued through December 9 and 10 and a number of notable speakers addressed the convention in behalf of the interests of the various sections of the country. All demanded the issuing of bonds with which to carry on the work. The Ohio river delegates made more progress perhaps than any of the rest with President Taft and the rivers and harbors committee.

Officers Elected.

On the last day Representative Joseph E. Randsell, of Louisiana, was reelected president, and Capt. J. F. Ellison, of Cincinnati, was returned to office as secretary and treasurer. Vice-presidents to represent states were also named.

Toledo, Ohio, and one or two other cities sought the 1910 convention. The matter was put over, however, until a later date. It was said that a majority of the directors favor Washington.

Statement Prepared By Chairman.

The National Rivers and Harbors Congress includes in this convention 3,150 accredited delegates, farmers, manufacturers, merchants, maritime and professional men and members of commercial bodies, representing the greater part of the tonnage of the United States, as well as the shipping interests of the country at large.

This Congress is assembled to urge upon the government of the United States the immediate adoption of a broad, liberal, comprehensive and effective policy of river and harbor improvements, with profound conviction of its responsibility, and earnestly requests the attention of the president of the United States and the Senate and the House of Representatives of

ways to the exclusion of private effort, is alone among the world powers in neglecting the improvement of its waterways, and has so failed to develop them into effective freight-carrying navigability that the inadequate transportation facilities now seriously impair our commercial growth, and cause enormous waste of our agricultural resources, retarding the settlement of the country and hindering its productive development.

Unless these transportation facilities be made sufficient, the United States cannot hope either to increase its domestic commerce or extend its foreign commerce as it should, or to take advantage of the opening of the Panama canal in order to compete with other commercial countries in the market of the world. This government has the power to give the United States absolute commercial supremacy over all other countries; and the sixty-first Congress, now in session, can do much to accomplish this by appropriate legislation.

A Rivers and Harbors bill should be passed as early as possible in the present session of the Congress, appropriating at least fifty million dollars for the purpose of carrying forward, under the continuing contract system, such rivers and harbors projects as have been heretofore entered on or finally approved, and as are of such a character as to surely fit into and carry into effective use any larger, comprehensive and connected waterway system that may be subsequently adopted, and annually for ten years hereafter an equal sum should be appropriated; and we believe that the annual Rivers and Harbors bill should be placed upon an equal footing with the other great appropriation bills, and we condemn the present method of appropriation, whereby the Rivers and Harbors bill carries only such sum as may remain after the other budgets have been authorized.

All projects approved by the government engineers and adopted by Congress should be put upon the continued contract system, and moneys provided for their completion as rapidly as physical conditions permit; such moneys to be paid from current revenues when practicable, or from an issuance of bonds when necessary.

To secure the development of our rivers and harbors on a comprehensive and systematic plan, a department of public works, with a cabinet officer at its head, should be created, which department should have charge of and control over all public works of this and of a similar character. This need in no way prevent the use of the United States corps of engineers now having charge of rivers and harbors work. The corps is now manifestly insufficient for the work it is called upon to do, and we urge that it be sufficiently increased, utilizing in the present organization, as far as is practicable, the United States assistant civil engineers now in the employ of the government. We endorse the bill now pending before Congress for the increase of this corps of engineers and urge its enactment into law. We believe that this corps of engineers should be given authority and it should be made its duty to formulate and suggest to Congress plans and projects for rivers and harbors improvement.

In order to fully secure the benefits of waterway improvement to the shippers of the country, it is absolutely necessary that the harbors, lakes and rivers should have the most modern terminal systems for the vessels, and we earnestly urge upon the people of states and cities, where waterway improvement is proceeding, the importance of establishing public terminals and landing places with the most modern appliances and equipment for loading and unloading freight and of beginning the work immediately.

Actuated by the desire to see the United States become the chief commercial country of the world, we, the delegates to this National Rivers and Harbors Congress, present this statement of the transportation conditions now existing, and the remedy we propose, for the consideration of the president of the United States and of the national Congress, and on behalf of the people of our country we urge the adoption of these recommendations.

JAMES E. SMITH,
Chairman.

Resolutions Adopted.

Resolved, That it is the sense of the individual delegations participating in this meeting that we affirm the policies adopted as represented in the resolutions accepted here this day; that we authorize the officers of this association to sign the same for us and our individual associations; that these signed resolutions be presented to each individual legislator at Washington that he may hear the rumbling of the voices of 30,000 business people who are acting through us today in asking for the improvement of our waterways.

Resolved, Further, that we pledge ourselves to have immediate additional endorsements of business organizations presented to congressmen on or before January 1, 1910.



THE PROBLEM OF THE PILOTS.

the national Congress to the matters herein set forth.

Every commercial country in the world is working to better its transportation methods, knowing that upon easy, cheap and sufficient transportation depends the material prosperity of its people, and knowing that to the country which first perfects its system of transportation, will come the commercial supremacy of the world.

Every foreign country is utilizing its rivers and harbors and other waterways as the chief factors in perfecting its system of transportation, and the government of every foreign commercial country has deliberately assumed the responsibility of making its rivers and harbors and other waterways adequate for all transportation purposes.

The United States, with resources and courage great enough to undertake successfully the building of that gigantic and most useful water highway, the Panama canal, controlling its own navigable water-

QUARRIES

Iowa Quarrymen in Convention.

CEDAR RAPIDS, Ia., Dec. 18.—The third annual convention of the Iowa State Quarrymen's Association was held in this city December 6, at the Montrose hotel. The following members were present:

Jas. W. Burroughs, Marshalltown.

Henry Able, Davenport.

Mr. Crowley, Davenport.

J. A. Green, Stone City.

John Ronen, Stone City.

W. N. Dearborn, Stone City.

H. F. Dearborn, Stone City.

Frank Erickson, Cedar Rapids.

E. J. C. Bealer, Cedar Rapids.

Charles Fangier, Dubuque.

Charles Arquette, Farley.

Hale Roberts, Iowa Falls.

President Jas. W. Burroughs presided over the sessions and as usual gave one of his forcible addresses, which was as follows:

Gentlemen of the Association:

One year ago we held our second annual convention in this city and at that time we were just getting over the effects of the money panic of the year before.

It was thought the trouble would soon pass over and times in general improve. I am glad to say such has been the case and the past season, take it all in all, has been quite an improvement over that of 1908.

After the working season opened it was no trouble to secure orders and in a few months every quarry of any importance in the state had more business than it could take care of promptly.

It was not a question of getting the business but of getting good competent help at reasonable wages to produce the goods and deliver them in time to satisfy the customer.

Some quarrymen had plenty of help—but a limited capacity and when that was reached the only thing they could do was to fill orders as received and let others wait or place them with some other quarry.

A contractor who had given the situation no consideration came into our office one morning and said: "I want a car of crushed stone today and one each day for ten days; load all you can on each car you ship, and don't fail, as I have my teams ready to unload promptly." We told him we were sorry but could not take his order on those conditions as we were working to full capacity and were behind two weeks or more on our orders, he would have to wait or get the stone from some other company. He replied he could not wait and would place his orders with another firm. He went out and to our surprise came back in about two hours and said: "Fill my order just as soon as you can and if possible, get me one car this week. I have been using the long distance telephone and find all the quarries in this territory are just as full of business as you are."

Like a great many contractors he waited until the last moment to place his order, never thinking but what the quarrymen could ship a car or more of stone at any time upon his request. Time and experience has proven that contractors who make a success, get the material for a job on the ground ready for the workman. We took his order, filled it soon as we could and he was satisfied. We cite this case to show the condition of the crushed stone trade the past season and think the year of 1910, which is before us, will be equally as good if not better.

Nothing but a money panic can prevent it and there are no clouds in the financial sky at present. The outlook for the future is good and we are in hopes you will all make the best of your opportunities. The two great business barometers of this country are the iron industry and the railroads. The iron industry has great prospects before it for the coming year and a quotation from the *Iron Age* will give some idea of what is taking place: "Astounding as is the rush of pig iron production into new records in the last few months, it is the promise of still greater outputs in the near future which is fairly staggering. The pig iron statistics for September show a record production of coke and anthracite iron of 2,385,206 gross tons, in 30 days, as compared with 2,248,930 tons in 31 days of August; yet this does not measure the progress made. We entered the month of October with active plants having a weekly capacity of 564,885 tons, or at the rate of over 29,750,000 tons, which contrasts with a record production of 25,781,361 tons, in 1907. In other words we are now making pig iron at the rate of 4,000,000 tons larger than the best year the country has ever known. The steel companies made in September 1,660,839 tons, which include 1,155,496 tons of the make of the Steel Corporation, whose total September output of all grades of pig iron, including foundry, reached the record of 1,184,370 tons. We may add that the Steel Corporation attained a record also in steel production in September, the total being 1,302,074 tons of ingots.

"The whole industry is under tremendous pressure which would be almost alarming were it not for the fact that we are approaching the season of the year when a good deal of outdoor work is suspended and actual consumption shows a tendency to shrink. In fact, in some branches, which reflect this most closely, notably in the wire trade and in the structural industry, the feeling is gaining ground that there may be even a moderate setback after the fall rush is over and before the spring demand sets in. The latter is expected to be a record breaker.

"There is almost a famine in steel bars and a lively overflow is coming to the iron bar mills, of which many are in position to take care of fairly early deliveries. There are many inquiries for steel bars for the first and second quarters of next year. The mills are cautious and while some are quoting \$1.50 Pittsburg, for the first quarter, the majority have not yet opened their books. A heavy movement is expected when they do."

The production of pig iron is now at the rate of nearly 31,000,000 tons a year and this means there is going to be something doing—since the first of June orders have been placed by the railroads, for 47,000 freight and passenger cars and during the calendar year of 1908 the record shows orders for only 64,000 cars. The railroads which a year ago were complaining about having so many idle cars are now put to their wits' end to furnish cars needed and there is every indication of them having more business than they can handle promptly. It will be seen the two leading industries are in a greatly improved condition over a year ago as well as nearly every other industry. It is estimated the northwest harvested a wheat crop of 50,000,000 bushels larger than previous years, and the corn crop is expected to be nearly 3,000,000 bushels, while the oats, rye, barley and other farm products will be more than an average yield. With the farmers prosperous, the railroads and all the leading industries doing a good business, there is no reason to think the stone industry of Iowa is going to languish, provided it is managed economically and the product sold at a fair profit. It would be well for every quarryman in this Association when he goes home from this, our third annual meeting, to look over his quarry and ask himself these questions: Am I handling this proposition to the best advantage? Am I selling stone and getting what it is worth, or am I letting it go for less than I should? If you find certain conditions force you to pursue a course that you cannot help, then the thing to do is to make an effort to correct those conditions soon as possible.

A question which will soon have to be taken up with the railroads by the quarrymen of this state is the kind of cars they furnish for the transportation of crushed stone and the condition they are in when set in the quarry to be loaded. The cars usually furnished are the standard dongs and often they are very dirty. Such a car can be used to ship rubble, rip-rap, or any large size stone, but, when it comes to shipping crushed stone, the car must be cleaned and, so far, the quarryman has stood this expense without any complaint, from the fact, that the crushed stone business was of little importance until recently. The demand for crushed stone has quadrupled in the last few years and will continue to do so for years to come. There will always be a good amount of rubble and rough stone of large sizes sold, but, the main output of a majority of quarries in Iowa, in the future, will be crushed stone.

The condition of the cars is not the only question to be settled, but their construction will have to be taken into consideration also.

We had some cars set in the quarry during the past season, the sides of which lacked one and a quarter inches coming down to the bottom. Such cars cannot be used to ship stone that is one inch and less and screenings, until the cracks along the sides are made tight.

The cars should be constructed so the sides will come down to the bottoms, otherwise a large amount of the stone will leak out during shipment. Every year the demand for small size stone increases and in a short time nearly all the crushed stone sold to the commercial trade will be two inches and less. It takes considerable time to fix up such cars besides some material must be used and all this costs money. It is the duty of the railroads to furnish cars suitable and in clean condition for the commodity to be transported. Suppose a miller placed an order for cars to ship wheat in and when he received them they were dirty, and the sides lacked one and a quarter inches coming down to the bottom, they would be refused at once from the fact they were not suitable. This will be the situation the quarryman will find in the future when he wants to ship fine grades of stone and screenings. He will either have to furnish the labor and material to fix up such cars and stand the expense or stand on his rights and demand cars that are properly constructed. There is no doubt the railroads will attend to this matter as soon as their attention is called to it.

The up-to-date quarryman must prepare to meet the rapid progress being made in concrete construction and the great demand for all sizes of crushed stone. His crushing plant must be built along new lines with all of the late improved methods used in its construction or he will not be in it. What constituted a good plant ten years ago is considered a poor thing when compared with the modern plants now being erected where compressed air has superseded both hand and steam drilling and the loading of stone for the crusher is being done by steam shovels. The great expense of producing crushed stone is in reducing the large stone after a blast, to a suitable size for the crusher. The average man in a quarry does not want to lift a stone that weighs over one hundred pounds. When he takes a sledge to reduce a stone he will keep pounding away regardless of time or cost as he would rather pound than lift. To load stone with steam shovels requires quite an outlay of money. Those who run small quarries cannot afford it.

We hear a great deal about the man behind the gun and his importance in the time of action, but what shall we say of the man behind the quarry? It makes no difference how good or how well a quarry may be located and equipped, unless some man is behind it to operate and conduct its affairs intelligently, it will not prove a great bonanza. It is immaterial whether a man owns or manages a quarry. Unless his whole soul is wrapped up in it he is totally unfit to manage the business. The day has gone by when a shiftless, go-easy, don't-care fellow can remain at the head of any business institution. The man behind a quarry has many things to contend with and he must be on to his job to hold his own. He must know how to produce a ton of stone at the least possible cost; how and where to purchase his fuel and supplies for the least money; see that his crushing plant (if he has one) is well balanced and keep it in first class order. He must watch and see that fuel and oil are not wasted. He must systematize his business. He must know how to handle men and see that every man works to good advantage. He must know how to get along with men and keep everybody working in harmony. He must know what a day's work is and never fail to demand it of every man. He must be fair and impartial at all times and under all circumstances. He must pay his bills and collect his accounts promptly. He must cut out the loafer in every department and avoid opening accounts with irresponsible parties. He must be an all-round fellow, wide awake and up-to-date. When he fills these and many more requirements not here mentioned, you can say of the man behind the quarry: "He is the right man in the right place." It should

be the ambition of every man engaged in business to be the leader and not the follower of others. A man can trail along in any kind of business, but he will never shine like a glittering gem or be a power for good in the world. It is better to make an effort to get to the front and fall than to make no effort at all.

Of all the different lines of business in this world there is none more honorable than that of the quarryman. He has nothing to be ashamed of and a great deal to be proud of. While there is a rough side to the business, by patience and perseverance he can smooth down the bumps and push aside obstacles that appear from time to time in his pathway and finally land on the top rung of the ladder of success.

No man can have a quarry made for him to order. He must take it just as it comes from the hand of the Creator and it is well it is so.

The man who invests his money and time in a quarry, hopes to realize a fair return upon his investment. He cannot, however, take all the benefits to himself. He must employ other men and in doing so, he necessarily contributes to the welfare of others. When after years of hard toil and labor, he has made a going institution, he has cause to feel satisfied with himself, from the fact, he has been successful in his undertaking. Not only this, he is a public benefactor and the world feels proud of him. Such a man is an honor to the community in which he resides and is entitled to the respect of all who know him.

There is nothing gives me more pleasure than to meet the members of this Association in annual convention. While our membership is not large, the friendly feeling existing has taught us to respect one another and has proven that men engaged in the same line can be friends and do business as gentlemen should. No one of us can furnish all the stone required to fill the great demand each season and it is far better to do what we can get a good price, than to undertake to do it all without a reasonable profit.

I desire to thank each and every one of you for the kindness and consideration shown me as president of this Association. All my efforts have been put forth in your interest and as the holiday season is approaching when

"You hear the jingle,
Of Old Kris Kringle."

you can rest assured of having my best wishes for your future success, both individually and collectively.

The election of officers resulted in the re-election of the present incumbents, viz.: J. W. Burroughs, president, Marshalltown; W. N. Dearborn, vice-president, Stone City; Frank Erickson, secretary-treasurer, Cedar Rapids.

For many years Mr. Burroughs has been manager of the LeGrand Quarry Co., the property of which was sold a few months ago to the Northwestern railroad. Mr. Burroughs has been working during the past few months closing up the affairs of the company, and on January 1 will sever his connection with it. From then on he will devote his entire time to the management of the affairs of the association and the interests of its members.

In the evening a banquet was held, which was a very enjoyable affair. The meeting was a highly profitable one and the members had a splendid time.

The next meeting will be held December 5, 1910, at the Montrose hotel, Cedar Rapids.

Suit Brought on Bill for Stone.

MUNCIE, IND., Dec. 18.—The Muncie Stone and Lime Co., has filed a suit on account in the Delaware circuit court against Harry J. McClellan, Robert J. McClellan and Dennis C. Connell, for money due on the purchase of stone used in the construction of the James H. Smell road, in Center township, for which Harry J. McClellan was the contractor. The amount demanded is \$1,251.58. This particular road is one of those constructed under the "three-mile road law," declared unconstitutional by the Indiana supreme court week before last.

Will Increase Crushed Marble Output.

WHITESTONE, Ga., Dec. 17.—A carload of new machinery is looked for daily at the quarry of the Detroit Marble Co. When this arrives and is put in operation the output of the quarry will be doubled. The company makes a specialty of crushed marble for granolithic floors, and in this field has met with great success, the product making a hard, clear white, and unusually beautiful flooring. It is also producing powdered and pulverized marble, as well as marble dust and whiting for which there is a growing demand on account of the merits of the output. The headquarters of the company are in Detroit, Mich.

Big Cargoes of Crushed Stone.

ALPENA, Mich., Dec. 18.—During the season just closed the steamer Alpena, owned by the Michigan Alkali Co., carried 288,636 tons of crushed stone from the company's quarries to Wyandotte. This gives some idea of the magnitude of the crushed stone industry at this point.

Universal Crusher Co., Cedar Rapids, Inc., incorporated; \$50,000 capital; incorporators, D. B. Getty, Jos. Cockfield, E. A. Velde, F. F. Dawley and C. E. Wheeler, all of Cedar Rapids.

Experimental Blast In Ohio.

WARWICK, O., Dec. 18.—A large experimental blast of unusual interest to those concerned in quarrying, as the material was conglomerate sand rock of a spongy nature, was fired recently at the quarry of the Franklin Industrial Co., at this place. The test was made to solve the economy of a well drill in this kind of rock and the use of a high explosive for shattering the material and putting it down ready to load into quarry cars. The advantages to be gained by having a large amount of rock broken and ready for use was unquestioned.

This quarry has a ledge of stone 40' high and the work has hitherto been done by the well-known method of drilling and shooting short holes. General Manager J. E. Ruch, having had some former experience with heavy shooting, decided to test this latter method of blasting. He engaged a Cyclone drilling outfit to drill a series of holes in a straight line along the face of the quarry, the size of the holes being 4" in diameter, depth 40', and average of 12' back from the face and 13' apart.

As a first test four of these holes were loaded with 275 pounds of Dynalite per hole, after first springing them with the same explosive, and 1,387 cubic yards of rock were thrown out, the average size of the pieces being estimated by the superintendent as 50 pounds each. This was exclusive of the fine material, which could be easily shoveled.

This being an experimental shot, it was found that a great deal more explosive was used than was absolutely necessary for obtaining the desired results. Greater economy could be gained by setting the holes farther apart and loading them with the same amount of Dynalite per hole, the point being that, while the holes were loaded exactly right in regard both to amount of explosive and manner of loading, they were closer together than necessary, as shown by carrying one of the holes by the blast without loading it. It is figured that half the number of holes will do the required work.

The firing of the blast did not cause any unusual amount of noise or jar, as it was well confined and graded and, in fact, did not cause as much concussion in the air as a few short holes lightly tamped and confined.

This blasting demonstrated that the operators of the quarry will be able to get out their material at a big saving under that of short holes and light charges. The heavy loading has also proven a number of other advantages over the old method, one of which is the large amount of material which can be thrown down at one operation and which does not interfere with the workmen in the quarry, as is the case with small shots.

The material is also in much better condition for handling, as there is a smaller number of large pieces, and there is no shortage of spalls, which has been the case a number of times in this particular quarry, thus causing a shut-down.

General Manager Ruch has expressed himself as being highly pleased with the result of the experiment, and considers it is considerably cheaper than the method previously used.

One feature in connection with this shot was that the face of the quarry was cut from top to bottom and left perfectly straight, and the next round of holes, which will be fired back of this, will be much more easily gauged than the experimental ones.

The accompanying cuts show the face of the quarry before and after the shot was made. It will be noted that the loose stone stands almost 20' high in places and was put well out into the quarry and evenly distributed, the larger rocks, of course, being in the foreground. It was found that the bottom was broken

up in much better shape than the top, due to the larger amount of the explosive being placed in the bottom of the hole.

Mr. Ruch says he considers Dynalite as being the proper explosive to use in his material, which is a soft conglomerate sand rock and much more difficult to shoot, especially in large blasts, than lime rock.

The loading and firing of this blast was under the personal supervision of F. H. Briggs, the inventor of Dynalite and general manager of the American Dynalite Co.

Dunbar Stone Co. to Make Improvements.

DETROIT, MICH., Dec. 16.—Plans have recently been completed by the J. C. Buckbee Co., engineers of Chicago, for extensive improvements to the plant of the Dunbar Stone Co., at River Rouge, near this city. These consist of the complete remodeling of the existing plant and the addition of a new screen house, belt conveyors and storage bins of about 2,500 tons capacity. Also a recrushing plant for balancing the output of sizes produced by the plant to meet market demands.

Capitol Limestone Co. Increases Capacity.

COLUMBUS, O., Dec. 18.—Plans have just been completed by the J. C. Buckbee Co., engineers of Chicago, for a rock crushing plant for the Capitol Limestone Co. It will have a capacity of 750 yards daily capacity, and will be erected during the winter, to be ready for the season opening next spring. This plant will be located just outside of the city limits of Columbus, where the company has a very fine quarry. A No. 6 McCully crusher will be installed.

New Crushed Stone Plant in Iowa.

CEDAR RAPIDS, Ia., Dec. 18.—Another crushed rock concern has been organized here by men who have been connected with the business in this vicinity. It will be known as the American Crushed Stone Co. and the plant will be erected at Garrison, Ia., about thirty miles from here. The contract for the crushers and all other machinery needed has been awarded to the Austin Manufacturing Co., of Chicago.

Damage Suits Aggregate \$60,000.

WAUKESHA, WIS., Dec. 18.—Damage suits aggregating \$60,300 have been begun in the circuit court against the Waukesha Lime & Stone Co. as the result of an explosion of dynamite at the crusher quarry of the company last August, in which Peter Pietro Palmerino was killed and several other Italian laborers badly injured.

Burlington Railway to Operate Quarry.

GUERNSEY, WYO., Dec. 18.—The Burlington railway has filed on 480 acres of government land four miles east of this place, using land scrip and is preparing to install a rock crusher and begin the shipment of ballast. It is understood that all ballast for the western Nebraska and northern Wyoming lines will be shipped from the new plant.

Fred Oliver to Operate New Plant.

CHARLOTTE, N. C., Dec. 18.—Fred Oliver is making plans to operate a rock crushing plant near here. He has ordered a No. 6 and a No. 5 crusher, together with elevators, screens and cars, from the Austin Manufacturing Co., of Chicago.

Will Erect a 4,000-Ton Crusher.

DUNDAS, ONT., Dec. 15.—Doolittle & Wilcox are having plans prepared for a 4,000-ton crusher plant, to be erected on their property just west of here, to be completed in time for next season. This plant will consist of a 42" gyratory crusher as a receiving machine, with smaller gyratory crushers for subsequent crushing, a large screen house and a storage bin of about 2,500 tons capacity. Also a recrushing plant for balancing the sizes of the plant. The engineers in charge of the work are the J. C. Buckbee Co., of Chicago, Ill.

Good Roads Men in Session.

TOPEKA, KAS., Dec. 16.—The annual convention of the National Good Roads Association was held in this city December 14-16. It was attended by prominent good roads advocates from all parts of the country. An address was made by Governor W. R. Stubbs, who welcomed the delegates. Other addresses were made by Governor A. C. Shallenberger, of Nebraska; John Craft, president of the Alabama Good Roads Association, and R. J. Chaney.

Rolls in General Use for Recrushing.

RACINE, WIS., Dec. 15.—That rolls are playing an important part in the crusher plants of the country is demonstrated by the large number now in use. The Universal Crushed Stone Co., of this city, has installed a set of Superior rolls, 54"x24", for re-crushing the product of the crushers.

Crusher Outfit for California Quarry.

PACOMAI, CAL., Dec. 16.—The Pacomai quarry has purchased through Henshaw, Bulkley & Co., of San Francisco, a complete Austin crushing plant. It consists of No. 6 and No. 4 crushers, with manganese heads and concaves, elevators, screens, hoists and ears.

Good Demand for Road-Making Rock.

MARQUETTE, MICH., Dec. 16.—P. B. Spear, manager of the Marquette Stone Co., says: "We have had a very successful year, particularly crushing trap rock for road work."

Le Claire Stone Company Enlarges.

DAVENPORT, Ia., Dec. 20.—The Le Claire Stone Co. has let the contract for enlarging its plant to the Austin Manufacturing Co., of Chicago. It is adding a No. 7½ crusher to the present equipment.

Improvements at Apollo Plant.

APOLLO, PA., Dec. 18.—The Apollo Lime and Ballast Co. is making some improvements at its plant and installing a No. 6 crusher outfit.

Crusher for Citico Furnace Co.

CHATTANOOGA, TENN., Dec. 17.—The Citico Furnace Co. has ordered a No. 6 Austin crusher, which will be installed at its furnace at Citico, Ala.

Install New Crusher at Elmhurst.

ELMHURST, ILL., Dec. 17.—The Elmhurst-Chicago Crushed Stone Co. has installed another No. 5 crusher at its plant.



BEFORE THE SHOT WAS FIRED.
EXPERIMENTAL BLAST USING DYNALITE IN SAND ROCK QUARRY OF THE FRANKLIN INDUSTRIAL COMPANY, WARWICK, O.



AFTER THE SHOT.

ROCK PRODUCTS

DECEMBER 22, 1908.

CRUSHED STONE INDUSTRY IN 1908.

While the crushed-stone industry of the United States has been increasing steadily for the last ten years, it is a peculiar fact that the official product in 1908 was \$1,792,285 less than 1907. This is all the more remarkable when it is considered that in 1907 there was an increase of \$4,586,811 over 1906. This is explained in "The Stone Industry and the Manufacture of Lime in 1908," compiled by A. T. Coons, and published by the United States Geological Survey, as follows:

This remarkable decrease in 1908 was due to the financial depression, the decrease being in value of stone used for concrete and railroad ballast, while roadmaking, less influenced by the money market, showed an increase in demand. The beginning of the crushed-stone industry was practically about ten or fifteen years ago, when the demand for good roads in the northeastern states and the convenience of good material for this purpose in the trap-rock deposits in the New England and middle Atlantic states led to the use of this material in larger quantities and for other purposes than on roads and in railroad ballasting. The value of the crushed stone output in 1899 was \$4,692,343. In 1906 it had grown to \$17,467,486. The figures for 1907 were \$22,054,297, and for 1908 \$20,262,012.

The following table shows the quantity and value of crushed stone produced in the United States in 1907 and 1908, by states and territories and by uses:

Production of crushed stone in 1907 and 1908, by States and Territories and by uses, in short tons.

1907.

State or Territory.	Road making.		Railroad ballast.		Concrete.		Total.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Alabama.....	10,000	\$5,000	.....	.....	45,164	\$21,287	55,164	\$26,287
Arizona.....	6,537	6,983	5,000	\$5,000	25,062	41,645	25,062	41,645
Arkansas.....	849,869	629,114	265,038	96,214	525,938	479,592	1,640,845	1,204,924
California.....	1,000	900	23,978	21,580	41,342	20,715	66,320	43,195
Colorado.....	393,842	222,206	149,978	74,660	283,110	148,435	826,273	118,594
Connecticut.....	60,535	40,298	58,153	36,666	51,610	41,628	170,298	6,000
Delaware.....	6,000	15,000	.....	.....	.....	.....	15,000	6,000
Florida.....	39,027	25,407	310,969	152,847	82,078	61,051	432,074	239,305
Hawaii.....	.....	.....	9,850	7,599	9,850	7,599	11,850	9,850
Idaho.....	11,631	17,302	.....	.....	11,631	17,302	11,631	17,302
Illinois.....	1,517,425	958,032	788,894	499,204	1,118,919	3,882,575	2,576,155	1,048,737
Indiana.....	972,695	476,711	323,650	134,932	120,289	60,918	1,416,634	672,561
Iowa.....	101,696	69,817	158,651	77,571	186,638	118,682	446,983	266,070
Kansas.....	87,208	76,420	733,511	357,820	122,903	55,469	943,622	489,709
Kentucky.....	417,823	292,241	691,405	292,714	76,718	54,917	1,185,946	639,872
Maine.....	1,688	1,511	750	325	33,437	19,926	35,875	21,762
Maryland.....	366,910	348,875	164,800	103,147	429,598	499,337	961,308	651,359
Massachusetts.....	423,905	315,221	85,920	42,860	394,000	326,964	903,830	648,945
Michigan.....	225,522	131,708	90,279	46,516	191,167	97,762	506,968	275,986
Minnesota.....	183,021	156,026	42,592	36,394	182,224	153,937	407,837	346,361
Missouri.....	673,659	444,685	532,050	284,158	549,972	454,433	1,755,681	1,183,276
Nebraska.....	63,221	55,824	65,148	53,584	145,757	121,027	274,126	230,435
New Hampshire.....	5,300	3,975	.....	.....	21,887	14,349	27,187	18,324
New Jersey.....	735,681	578,640	323,682	210,247	304,168	255,129	1,263,531	1,024,016
New Mexico.....	375	300	783,961	342,546	.....	784,336	342,846	.....
New York.....	2,500,143	1,827,416	958,504	406,890	956,080	601,605	4,414,729	2,895,911
North Carolina.....	97,907	62,939	364,369	175,847	145,014	106,497	601,290	345,283
Ohio.....	2,367,125	1,245,296	975,735	414,653	666,757	306,277	4,009,617	1,966,226
Oklahoma.....	4,600	4,000	243,137	146,747	26,335	16,405	274,072	167,152
Oregon.....	101,484	80,205	5,888	1,744	5,110	7,450	112,482	89,399
Pennsylvania.....	1,236,037	785,445	1,701,152	1,075,100	1,136,540	693,354	4,073,729	2,533,959
Rhode Island.....	22,040	25,480	5,500	5,550	27,540	31,030	.....	.....
South Carolina.....	26,097	25,887	10	17	6,250	4,500	32,357	30,404
South Dakota.....	28,000	14,000	.....	.....	10,500	10,500	38,500	24,500
Tennessee.....	26,250	13,994	270,923	118,911	69,498	41,530	366,671	174,435
Texas.....	103,915	64,318	171,927	79,843	47,267	48,838	323,109	193,019
Vermont.....	8,558	7,688	.....	.....	4,050	4,828	12,608	12,538
Virginia.....	120,775	96,938	138,221	63,073	214,021	200,286	479,017	360,296
Washington.....	10,505	17,630	1,000	500	1,150	1,430	1,150	1,430
West Virginia.....	36,048	18,406	573,454	272,887	70,504	49,012	680,067	340,305
Wisconsin.....	763,383	506,957	73,006	36,026	417,405	233,471	1,253,794	776,406
Wyoming.....	100	60	.....	.....	450	375	560	435
	14,607,582	9,660,244	11,075,080	5,721,289	9,345,469	6,663,764	35,028,131	22,054,297

In 1907 the rank and percentage was as follows: New York, 13.13 per cent; Illinois, 11.68 per cent; Pennsylvania, 11.58 per cent; Ohio, 8.92 per cent; California, 5.46 per cent; Missouri, 5.37 per cent; and New Jersey, 4.64 per cent.

In 1908 these states, except California, Missouri, and New Jersey, showed a decreased percentage of the total output, Illinois changing from second place to fourth.

The following table shows the quantity and value of crushed stone produced in the United States in 1907 and 1908, by uses and kinds of stone:

Quantity and value of crushed stone produced in the United States in 1907 and 1908, by kinds and uses, in short tons.

1907.

Kind.	Road making.		Railroad ballast.		Concrete.		Total.		Average per ton.
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	
Granite.....	1,262,069	\$1,060,658	1,447,406	\$714,574	1,375,973	\$1,335,530	4,085,448	\$3,110,762	20,76
Trap rock.....	3,265,249	1,181,260	1,626,987	1,164,505	1,073,472	4,280,554	2,750,554	1,700,554	70
Limestone.....	9,619,178	5,860,977	8,122,342	\$4,144,345	5,791,377	3,670,131	23,532,897	13,675,453	.58
Sandstone.....	461,080	312,457	324,072	181,473	551,156	403,598	1,336,314	987,528	.74
Total....	14,607,582	9,660,244	11,075,080	5,721,289	9,345,469	6,663,764	35,028,131	22,054,297	.....
Average price.....	66	.....	50	.....	71	.....	63	.....	.....

1908.

Kind.	Road making.		Railroad ballast.		Concrete.		Total.		Average per ton.
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	
Granite.....	1,429,814	\$1,207,666	693,020	\$384,215	976,808	\$633,387	3,099,642	\$2,445,268	30.79
Trap rock.....	3,386,415	2,313,693	1,121,769	682,875	1,550,010	1,005,652	6,058,194	4,002,220	.66
Limestone.....	11,910,760	6,880,893	5,095,109	2,530,738	5,907,625	3,496,576	22,913,494	12,908,207	.56
Sandstone.....	443,911	315,729	216,614	119,138	539,297	471,450	1,199,872	906,317	.78
Total....	17,170,900	10,717,981	7,126,562	3,716,966	8,973,740	5,827,065	33,271,202	20,262,012	.....
Average price.....	62	.....	52	.....	65	.....	.61	.....	.....

Production of crushed stone in 1907 and 1908, by States and Territories and by uses, in short tons—Continued.

State or Territory.	Road making.		Railroad ballast.		Concrete.		Total.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Alabama.....	99,330	\$45,028	3,250	\$1,500	21,446	\$16,651	124,026	\$61,179
Arizona.....	200	100	5,000	2,500	4,726	4,220	9,926	6,820
Arkansas.....	11,779	9,123	260,440	200,751	124,550	109,171	136,229	118,294
California.....	985,644	71,262	300	150	1,026	1,026	1,026	1,026
Colorado.....	4,000	4,000	2,454	2,454	266,628	181,708	286,201	286,201
Connecticut.....	370,735	201,540	200,000	100,000	317,702	156,840	458,380	458,380
Delaware.....	80,235	69,462	52,377	37,065	29,904	25,922	162,516	132,449
Florida.....	10,733	9,660	28,832	11,443	52,666	101,875	67,400	67,400
Georgia.....	4,396	3,291	28,832	11,443	42,814	49,219	71,083	71,254
Hawaii.....	28,269	22,035	.....	.....	4,211	4,211	4,211	4,211
Illinois.....	1,284,812	729,217	771,430	384,827	1,716,912	851,889	3,773,154	1,965,933
Indiana.....	1,177,435	622,726	282,819	95,165	159,211			

ROCK PRODUCTS

1908

State or Territory.	Rubble.	Riprap.	Crushed stone:			Other.	Total.
			Road making.	Railroad ballast.	Concrete.		
Arizona	\$20,476	\$22,635	\$100	\$92,771	\$100	\$8,544	152,567
Arkansas	51,833	164,323	6,500	101,612	346	1,684,504	592,904
California							121,281
Colorado							195,761
Connecticut	210,170	92,931	2,000	2,890	1,623	970,832	592,904
Delaware	35,571	1,349	69,462	37,065	25,922	81,219	10,402,760
Georgia	119,516	36,000	2,500	9,543	50,518	10,412	2,027,508
Hawaii			900	22,035	49,219	9,065	1,096
Maine	6,726	12,326	2,557	150	9,818	2,096	762,442
Maryland	60,359	7,751	206,505	32,923	143,838	20,680	4,840
Massachusetts	106,461	8,733	82,501	9,268	33,942	4,840	2,027,463
Minnesota	18,490	34,056	10,141	17,000	21,149	690	629,427
Missouri			3,771	6,051	15,741	8,162	157,968
New Hampshire	7,865	3,482	6,320	10,126	803	867,028	2,027,463
New Jersey	150	600	8,200	72,195	6,058	125,804	1,096
New York	15,119	733	102,040	28,837	21,906	50	367,066
North Carolina	4,933	730	114,474	33,612	27,333	22,538	784,272
Oklahoma	2,000		39	1,700			23,239
Oregon	709	600	158,051	6,718	20	271,869	1,096
Pennsylvania	6,674	14,696	28,261	1,909	11,595	13,683	324,241
Rhode Island	393	421	27,476	3,838	4,000	556,474	2,027,463
South Carolina	9,475	73,984	30,300	27,500	35,000	1,550	297,874
Texas	25	63,974	1,080		2,721	190,055	5,229
Utah		75					1,674
Vermont	385		8,641	1,000	2,451,933	9,660	41,910
Virginia	18,270	16,336	21,670	71,704	75	321,530	8,495
Washington	7,432	672,278	29,616	1,821	1,740	870,944	36,000
Wisconsin	5,488		76,703	70,815	1,529,781	77,011	14,037
Other States	600		6,400		40,320	139,703	3,122,552
	718,120	1,232,684	1,207,666	384,215	853,387	111,473	18,420,080

In dealing with limestone the report does not include the value of stone burned into lime and put on the market and sold as lime, except in cases where the stone was quarried by manufacturing plants and ultimately burned into lime and used in the manufacturing process. This applies especially to stone quarried by sugar factories and alkali works, which make no accounting for the lime, but measure the stone quarried. A large quantity of limestone used in the manufacture of Portland cement is also excluded from these figures as the value of this stone enters into and is included in the value of the cement.

The total limestone output decreased \$4,055,629 in value, from \$31,737,631 in 1907 to \$27,682,002 in 1908. In 1907 there was an increase of \$4,410,489 over the value of 1906, which was \$27,327,142. The output for 1908 was therefore but slightly in excess of the output for 1906. The large increase in 1907 was chiefly in crushed stone, which gained in value \$2,602,188, and in blast-furnace flux, which gained \$1,531,797. In 1908, the large decrease was chiefly in blast-furnace flux, which decreased in value \$3,239,248, and in crushed stone, which decreased \$767,246. Other decreases in value were rough building stone, paving stone, curbstone, flagstone, and stone for other purposes. Dressed building stone, rubble, riprap, stone for sugar factories, and crushed stone for road making increased in value.

Limestone for paving decreased in value \$268,663, from \$545,300 in 1907 to \$276,637 in 1908. Pennsylvania and Illinois usually produce most of the limestone used for paving, but in 1908 there was comparatively little produced in Illinois, and Pennsylvania decreased in value of output.

There was a decrease of \$141,274 in the curbstone output in 1908, or from \$378,853 in 1907 to \$237,579 in 1908. Indiana furnishes most of this material.

Largest of all Crushers.

BIRDSBORO, PA., Dec. 18.—The Schuylkill Stone Co., of this place, has recently ordered from the New York office of the Power and Mining Machinery Co. a rock crusher which is the largest that has ever been built. This crusher has an opening of 60" by 84" and its total capacity is 600 tons per hour. The largest installed previous to this time was one with a 42" opening.

The quarry of this company produces trap rock and the stone in passing through this crusher will be reduced to 10" ring. From this it will be conveyed into a No. 10 and two No. 7½ crushers and then elevated by a 60" pan conveyor to the screens. There are two revolving screens, 7' by 15'. These screens have perforations of 3" holes and all of the product passing through these perforations is discharged into two 5' by 15' revolving screens for another screening. These screen the material to two sizes, 2" and 2½" ring. The material passing through a second set of screens is discharged into two 5' by 24' screens and here sized into four sizes. It is then sputtered into the storage bins. When these are filled, a belt conveyor transports the material to the storage piles. Beneath the storage piles a 600' conveyor carries the stone from the piles to the track where it is loaded onto the cars. Arrangements are made for 20,000 cubic yards storage capacity.

The power of the plant is furnished by cross compound Corliss engines, with a separate power plant for generating the electric light for the crusher house and quarries for night work.

Open New Quarry in Indiana.

HUNTINGTON, IND., Dec. 17.—The Ohio & Indiana Stone Co. is about ready to operate its new plant at Greencastle, at full capacity. This is one of the most complete owned by the interests holding the Erie Stone Co. plant in this city and a large number in the western edge of Ohio. C. W. McKee of this city has been spending about three days a week at the Greencastle plant for some time and will now give it still more attention. The Greencastle plant has a

Simple Rules for Testing Road Materials.

BY AUSTIN B. FLETCHER, M. AM. SOC. C. E.

*A great diversity of materials enter into the construction of roads of the present day, for in this great country of ours every variety of climatic, geological and topographic conditions exist. Materials which might be economically useful in one part of the country may not be used elsewhere with economy because of excessive costs of haulage. An inferior material may often be useful economically because of the great cost of securing a superior material, and in general, without reference to city streets which do not come within the purview of this paper, it may be stated that for our common roads we must rely upon materials which are native to our own locality.

In general, the chief desiderata in rocks for road building are hardness and toughness, and the writer believes that toughness should be written first. It is wholly within the range of possibility that in the most modern types of road surfaces, considered economical for the kind of roads herein contemplated, namely, those in which some form of bitumen is used as a binder or matrix, or as a wearing coat, stones of somewhat inferior quality may be used safely.

If the road builder has a choice between stones for macadam purposes, and too often he has not, no scientific instruments of precision are usually required to determine the relative value of the stones. The stone hammer and the scratching of one stone with the other are all that are necessary. And it may also be generally stated that the rocks having a fine texture are more likely to be tough than those having coarse crystals. When there is not an excess of motor vehicles in the locality, a smooth surfaced road will be more often secured if ledge rock is used rather than field boulders. The field stones are usually of glacial origin. The fact that they escaped utter demolition in the cataclysmic grindings of the glacial period indicated that they were of the toughest and hardest parts of the rocks from which they were separated. But while they may be harder and tougher than the ledge rock in the locality, because of lack of uniformity in these characteristics, comprising boulder with boulder, the road surface in which they are placed is likely to wear less smoothly than if ledge rock is used.

Under very light traffic or when motor vehicles predominate, the writer believes that a relatively soft rock will often prove to be more economical than a relatively hard one; also that under such conditions when a good gravel is obtainable, its use will usually prove to be more economical than if the road is built after the macadam type.

Much has been said and written about the cementing of the fine dust or powder which results from the crushing of stone by machinery. The writer believes

that certain stones, notably the limestones, undoubtedly produce screenings of value in this respect. But while most of the other stones make a dust almost wholly lacking in this property, such screenings when properly applied serve well as a binder. It would seem that the action is more mechanical than chemical. The fact that sand, if the particles are angular and not rounded, is often used satisfactorily as a binder would seem to prove this hypothesis.

Of the most common stones used for macadam work, it has come to be generally accepted that trap rock (diabases, diorites and some other rocks of an igneous metamorphism) is the best. In the order of merit there follows the felsites, hornblende granites, the harder limestones, schists and quartzites. It is not safe, however, without investigation and tests, to say for instance that a granite is always better than a limestone, since some of the non-crystalline limestones are often found to be far superior to the large crystallized granites. This may also be found to be true when other rocks of the foregoing list are compared with one another.

Undoubtedly, the best laboratory tests of rocks for road building are those made by the Office of Public Roads at Washington, D. C., of which L. W. Page is Director.

That department undertakes to make tests and analyses of stones without charge. It has done much excellent work and tests and reports on tests are made with admirable promptness. The nature of the tests as made by the Office of Public Roads will not be discussed here. They include everything hereinbefore referred to concerning tests of rocks and much more, and they have been completely described in the bulletins of that department.

*Paper read at First American Congress of Road Builders, Seattle, Wash.

Casparis Company Wins First Bout.

COLUMBUS, O., Dec. 20.—Desiring to improve its plant, the Casparis Stone Co. recently asked for the vacation by the county of the Worthington and Georgesville road, where it crosses the Scioto river at the site of the now abandoned Jones mill dam. The viewers appointed by the county commissioners—Frank Merion, Washington Reese and James F. Williams—have reported in favor of the abandonment of the road. This action is not final, but it gives the company a marked advantage in the move to close the road.

A decrease of \$4,995 marked the limestone output for flagging in 1908, or from a value of \$84,076 in 1907 to \$79,081 in 1908. Most of this stone was from Wisconsin.

Rubble increased in value \$335,315, from \$1,067,445 in 1907 to \$1,402,760 in 1908. Ohio, Illinois, Missouri and Minnesota reported the largest productions.

Riprap increased in value \$231,794, from \$620,328 in 1907 to \$852,122 in 1908. Illinois, Missouri, Wisconsin, and Minnesota produced most of this stone in 1908.

Value of the production of limestone in the United States in 1907 and 1908, by States and Territories and uses.

State or Territory.	Crushed stone.			Flux.	Sugar factories.	Other.	Total.
	Road making.	Railroad ballast.	Concrete.				
Alabama	\$43,028	\$1,500	\$6,651	\$386,874		\$95	\$479,730
Arizona	350		350	42,430			a 50,130
Arkansas	2,373					185	61,951
California	25,185	2,700	12,000	\$6,945	\$104,676	5,110	237,320
Colorado	2,000			276,140	100,172	510	378,822
Connecticut				1,488		1,674	b 3,727
Florida	9,660						41,910
Georgia	791	1,900	2,148	946		172	8,495
Idaho					31,800		36,000
Illinois	728,017	384,827	851,889	540,718	3,893		14,037
Indiana	622,726	95,165	77,011	139,703		21,922	3,643,261
Iowa	75,806	28,687	181,668		750	10,778	530,945
Kansas	29,800	99,306	74,555			18,490	403,176
Kentucky	350,577	235,802	35,482	11,283		6,159	810,090
Maine	62,316	35,344	16,745	210		571	128,591
Massachusetts							1,950
Michigan	182,510	33,900	73,200	56,841	32,594	253,990	669,017
Minnesota	48,264	20,389	95,995	100	4,425	20,225	667,095
Missouri	726,772	130,296	341,768	14,678	5,970	45,805	2,130,136
Montana			756		116,071	5,642	134,595
Nebraska	51,007	16,010	173,449	11,700	1,250	75	330,570
New Jersey	18,294		2,533	149,301		1,447	172,000
New Mexico							(d)
New York	942,434	227,730	472,425	205,758	1,080	370,254	2,584,559
North Carolina	1,436,874	349,535	246,516	635,354	2,500	204,635	3,519,557
Oklahoma	2,000	102,335	95,819			2,758	257,066
Oregon					130	6,000	6,230
Pennsylvania	653,503	300,702	419,518	2,324,173	20,034	74,719	4,057,471
Rhode Island							(e)
South Dakota							(f)
Tennessee	211,896	56,439	60,350	142,573		14,530	g 535,882
Texas	81,978	115,322	9,495	31,206		1,625	314,571
Utah	14			263	161,383	24,400	253,088
Vermont	9,275		2,535	334		72	20,731
Virginia	30,159	45,541	26,604	169,847		5	280,542
Washington					26,410		5,250
West Virginia	70,939	197,189	24,939	337,742		3,776	31,660
Wisconsin	464,345	47,363	192,248	25,935		13,798	645,385
Wyoming				420	8,908	16,000	1,102,099
	6,880,893	2,530,738	3,496,576	5,905,241	361,186	1,002,667	27,662,002

^a Includes New Mexico.

^b Includes Maine and Rhode Island.

^c Includes with Connecticut.

^d Includes with Arizona.

^e Included with Tennessee.

^f Included with Wyoming.

^g Includes North Carolina.

^h Includes South Dakota.



National Lime Manufacturers' Association

Meets Semi-Annually.

OFFICERS.

William E. Carson, Riverton, Va. President
Charles Weller, Milwaukee, Wis. 1st Vice-Pres.
Walter S. Sheldon, Hamburg, N. J. 2nd Vice-Pres.
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EXECUTIVE COMMITTEE.

William E. Carson, ex-officio; Chas. Warner, Wilmington, Del.; T. E. Fleischer, Sheboygan, Wis.

Every manufacturer of lime should consider it a duty to himself, and to the lime industry, to attend the annual meeting of the National Lime Manufacturers Association at Pittsburgh, Pa., January 26-27, 1910. This applies to all manufacturers of lime, regardless of membership in the association.

President Carson Outlines Program.

RIVERTON, VA., Dec. 17.—President W. E. Carson of the National Lime Manufacturers' Association, has issued the following letter in connection with the annual convention of the association:

To the Lime Manufacturers of the United States, Greeting:

This letter is to invite you to the annual meeting of the National Lime Manufacturers' Association, which will be held at the Fort Pitt hotel, Pittsburgh, Pa., Wednesday and Thursday, the 26th and 27th of January, 1910. The sessions will commence at 9:30 a. m. on the morning of the 26th.

This meeting will be the most interesting in the history of the national association, as it will have several papers on original research in lime offered.

Within the last year, through the efforts of the National Lime Manufacturers' Association, the United States government has been induced to establish a branch for the investigation of lime at the Pittsburgh testing laboratories, under the supervision of Prof. A. V. Bleininger. An immense work has been done in original research, and results obtained to date, will be disclosed at this meeting.

The National Lime Association invites every lime manufacturer in the United States to attend this meeting, whether a member of the association or not.

The minutes of the meetings are the private property of the association, and are not distributed, except to members of the association, nor are the papers discussed printed in the trade journals, so if you want to hear the proceedings, you must attend in person.

If you are a member, you will get a copy of the minutes, but this does not in any sense convey the real scope of the meetings, as the greatest value is obtained at the informal discussions of the papers offered. Up to date we have secured the following papers:

"Report of Progress and Demonstration of Apparatus Used at the Testing Laboratories for Lime Investigation," by A. V. Bleininger, Chief Chemist.

"The Results of Some Lime Investigations, Lime Kiln Designs and Methods of Creating Draft for Lime Kilns," by W. E. Emley, Junior Chemist U. S. Geol. Survey.

"The Decomposition of Limestone, and Pyrometry for Lime Manufacturers," by J. K. Clement, Chemical Engineer, U. S. Geol. Survey.

"The Spreading Qualities of Mortars," by H. E. Ashley, Chemist U. S. Geol. Survey.

We further expect to have papers on the "Use of Lime in Agriculture," on "The Use of Lime in Spraying Fruit-Trees," and to have some original articles on the building of lime kilns, the gas producer, and the hydration problem.

With such an array of papers, you can judge for yourself as to the wisdom of your being on hand.

Yours truly,
W. E. CARSON, President.

When It Counts the Most.

A prominent lime man recently said in referring to his hydrating proposition:

"The value of being equipped with a hydrator comes prominently forward in time of car shortage which no operator can even attempt to control. There are times when slow firing has to be resorted to, and there are numerous instances of record when my



PLANT OF THE ELLISTON LIME CO., ELLISTON, MONT.

kilns had to be allowed to cool down entirely, because there was no way to deliver fresh lime to the customers who had orders on file. Now as a matter of fact slow firing does not materially reduce the cost, and there is always danger of having an underburned product. As soon as we got to hydrating our product we found that we could keep our kilns running to capacity in spite of what the railroads or anybody else might be doing, because there was no difficulty about storing our product. We find that when we can get cars at all we can get all we want, and the accumulated stock moves out uninjured in any way, and we are not made to suffer on account of other people's difficulties."

No one need to dread the car shortage which is inevitable with big profit taking in railroad circles, which simply means a shortening of the appropriation for adequate equipment against rush times. If any one does not realize that hydrate is rapidly coming to be the staple lime, he is due to wake up.

Short of Lime at St. Paul.

ST. PAUL, MINN., Dec. 20.—Searcity of lime and other building material, including cement, may cause a stoppage of all building operations in this city. The shortage is a result of the strike of railway switchmen.

Elliston Lime Co. Moves to Helena.

HELENA, MONT., Dec. 16.—The general office of the Elliston Lime Co. has been removed to this place, and from now on the company will conduct its business here. The plant at Elliston, twenty-five miles west of here, is located on the Northern Pacific railway. It consists of three steel draw kilns with a capacity of 225 bushels each. It is located advantageously as to producing facilities; the quarry opening has been made into the side of a hill, and the kilns are charged by cars which are conveyed over a bridge to the top. This makes the finest of quarrying and loading methods. About one-third of the output of the plant is sold in barrels and the remainder is sold in bulk. This plant is the first to establish the system of selling lime in barrels in the state.

The company is now making preparations to erect a hydrating plant, which will be put in operation some time during the next year. The lime at this place analyzes 97.78 percent Ca O.

The officers of the company are: President and

Manager, Wm. T. Kuehn; Secretary and Treasurer, W. A. Walker; Assistant Secretary, H. Kuehn.

W. T. Kuehn says, "Montana is the coming state, and we expect to see a constant increase in our trade. We are interested in reading ROCK PRODUCTS and always keep it in our office."

A Bouquet For Friend Kritzer.

Wm. Sewell, general manager of Fulwell Quarries and Limeworks, Sunderland, England, in writing to a competitor who is investigating the hydrating proposition in reference to his own operations, recently gave the following sketch of lime conditions in England:

"As this is the first hydrated lime which has been put on the English market its introduction is necessarily slow, but all our customers who have been induced to try it are much pleased with it and our sales are steadily increasing every month, notwithstanding the great depression in the building trade, which is still as severe as ever. Our price for the hydrated lime put on trucks at the works is 15 shillings (English) per ton. It is loaded in sixteen jute sacks to the ton, which we charge at 8 pence each and credit 7 pence each when returned, carriage paid, in good condition. Our price for the best lump lime loaded in bulk is 11.6 per ton.

"If you decide on putting up a hydrating plant I don't think you could put yourselves in better hands than the Kritzer Co., of Chicago, U. S. A. I consider their plant much in advance of any other I have seen, both from a mechanical and scientific point of view."

To Start Kiln at Mankato.

MANKATO, MINN., Dec. 18.—The Widell Co. has arranged with G. R. Bradley for the limestone on the latter's farm, north of this city, and is about to build a lime kiln and begin the manufacture of lime. Plans are being prepared for the kiln, and it may be that more than one will be put in. The first kiln is expected to be in operation by March 1. The Bradley farm contains eighty-three acres of excellent limestone. The Milwaukee road is at present engaged in putting in a sidetrack to the site of the kiln, so that the company will have shipping facilities.

Big Fee Paid in Virginia.

RICHMOND, VA., Dec. 16.—A single fee of \$1,000 was earned by the State Corporation Commission when it granted a license to do business in Virginia to the Rockland-Rockport Lime Co., of Maine, a concern which has an authorized capital of \$2,000,000. Its business is to manufacture and sell lime.

The Standard Lime Co., Guelph, Ontario, has just started its new hydrating mill, which has a capacity of 40 tons per day.

Rocky Ridge Lime & Stone Co., Rocky Ridge, Ottawa county, Ohio, has been organized by S. Almindinger and associates. The capitalization is stated at \$200,000.

Snow Flake Lime & Rock Co., Fort Spring, Va., has been organized to manufacture lime and cement and conduct a rock-crushing plant. The capital stock is \$10,000; incorporators, John S. Crawford, J. E. Crawford, W. B. Crawford, of Lewisburg; H. L. Crawford, of Staunton, Va.; W. B. Babbitt, of Lewisburg; A. C. Hill, of Ronceverte.

The Winchester Granite Brick Co., Winchester, Ky., have recently started to manufacture lime at its works, located at Dudley, Ky.



LIME KILN OF THE WINCHESTER GRANITE BRICK COMPANY, DUDLEY, KY.



The National Builders' Supply Association

Meets Annually.

OFFICERS

Frank S. Wright, Chicago.....	President
Harry W. Classen, Baltimore.....	Treasurer
James W. Wardrop, Pittsburgh.....	Secretary

STATE VICE-PRESIDENTS.

Arkansas.....	Charles E. Taylor, Little Rock
California.....	C. J. Waterhouse, San Francisco
District of Columbia.....	Charles Bye, Wilmington
Georgia.....	S. D. Lincoln, Washington
Illinois.....	P. G. Hanahan, Atlanta
Indiana.....	H. B. Lyman, Lafayette
Iowa.....	H. H. Halliday, Cairo
Kentucky.....	R. Hay, Dubuque
Louisiana.....	Owen Tyler, Louisville
Maryland.....	J. J. Kelly, Baltimore
Massachusetts.....	B. F. Marsh, Worcester
Michigan.....	S. J. Vall, Detroit
Missouri.....	Howard McCutcheon, Kansas City
Minnesota.....	F. J. Nixon, Duluth
New Jersey.....	Ambrose Tomkins, Newark
New York.....	M. A. Reeb, Buffalo
Ohio.....	E. S. Walton, Youngstown
Pennsylvania.....	Cyrus Borginer, Philadelphia
Rhode Island.....	C. M. Kelly, Providence
South Carolina.....	A. G. Gower, Greenville
Tennessee.....	W. W. Fischer, Memphis
West Virginia.....	R. W. Marshall, Wheeling
Wisconsin.....	R. C. Brown, Oshkosh
Washington.....	S. W. R. Dailey, Seattle

EXECUTIVE COMMITTEE.

James G. Lincoln, Boston; Walter F. Jahnke, New Orleans; A. E. Bradshaw, Indianapolis; Gordon Willis, St. Louis; V. H. Kriegsbaer, Atlanta; J. C. Adams, Pittsburgh; Charles Warner, Wilmington, Del.

Official Organ, ROCK PRODUCTS

The eleventh annual convention of the National Builders' Supply Association will be held at Chicago, February 23-24, 1910, during the Cement Show. Make your plans now to attend the greatest gathering of building material men ever held.

National Builders Supply Convention.

President Frank S. Wright and Secretary James W. Wardrop have issued the official call for the 11th annual convention of the National Builders Supply Association, which is to be held in Chicago, February 23-24, during the Cement Show. This call gives the following information:

Headquarters will be at the Annex Hotel, where all business sessions will be held. The annual banquet will be held at same hotel on the evening of the 24th, and a full detailed program will be presented later.

By order of the Executive Committee, this official call is announced at this early date to enable our members to make all plans to be present, and the committee respectfully urges the presence of every member, as many questions of vital importance to the supply dealers of the country, have been presented during the past year, some of them devolved to a point where report will be made to cover, and all requiring the most careful and serious consideration at the hands of the association as a whole, a necessity.

The Executive Committee has, after much careful thought, decided to open the business sessions of this convention to all active and honorary members, enrolled at the time of the convention, and to afford the fullest possible opportunity to dealers and manufacturers to hold friendly conference at this time, and to discuss and adjust some of the questions which seem to have disturbed our happiness, and to have prevented, perhaps, that measure of success which our close relationships entitles us to, and also to forever clear the board of any misunderstandings which may appear.

In the preparation of the program your Executive Committee seeks "practical topics for discussion by practical men" and expects to secure practical results that will help every man in his particular business. The Committee now invites from every member, whether active or honorary, such practical suggestions as he may feel pleased to submit, and promises most careful consideration of these suggestions, and the use of same in the program, so far as time and importance will permit.

There will be no exhibits invited at the convention hall, and no space has been provided. The Cement Show will offer every variety of exhibit possible; and we owe the courtesy of our enthusiastic support to this Show at this time. We believe the Executive Committee will have the unanimous support of its members in this decision.

An effort is being made by the officers of the Cement Show to secure reduced railroad rates to cover the period of the show, and these reduced rates, if secured, will be open to all our members. Full notice will be given later.

The convention will open at 10 a. m. Wednesday, February 23rd. Please be prompt. The sessions will be 10 a. m. to 12:30 noon and 2:30 to 5:30 p. m.—evening

session on the first day if necessity requires, in which emergency due notice will be given.

In order to properly plan for the comfort and convenience of every member who will attend this convention (in the convention hall and at the banquet), you are respectfully requested to fill in and return the enclosed postal card at your earliest convenience.

Ohio Builders Supply Meeting.

President Frank Hunter, of the Ohio Builders Supply Association, announces the dates for the annual meeting of that organization as January 20 and 21, at Columbus. Headquarters will be at the Great Southern hotel.

The Ohio association is made up of the live wires in the business and it has been a power for good in that state. About the coming convention President Hunter says: "We hope to have a good lively meeting and expect a large attendance."

No man interested in the distribution of builders' supplies in Ohio should miss this meeting. It will be full of interest every minute, judging from the following program sent out by Secretary Bert Graham:

Thursday, January 20.

Convention called to order in the convention hall of the Great Southern hotel at 10:30 sharp by President Hunter.

Address of Welcome—Hon. George S. Marshall. Greetings from Columbus Chamber of Commerce—J. Y. Bassell, Esq. Response—President Hunter.

Thursday, 3:30 P. M.

Sightseeing tour for the ladies in attendance.

Business meeting in the convention hall.

"lien Laws and Their Application"—William Harvey Jones, Columbus, O. "Best Method to Determine Profits on Builders' Supplies"—Albert Y. Gowen, Cleveland, O. "Safeguarding Credits"—Mr. Kinney, Cincinnati, O.

Thursday, 8:30 P. M.

Theatre party—Great Southern theatre.

Friday, January 21, 10 A. M.

Closed meeting in the convention hall. Reading of minutes. Report of officers. Report of Committees. Communications. Unfinished business. Election of officers.

Friday, 2:30 P. M.

Matinee for the ladies in attendance at the Great Southern.

Open meeting in the convention hall for manufacturers and dealers.

"Direct Sale from Manufacturers' Standpoint"—Paul B. Bolden, Canton, O. "Direct Sale from Dealers' Standpoint"—William Smith, Newark, O.

Friday, 8:30 P. M.

Card party for the ladies in attendance at the Great Southern. Banquet at "Schenck's."

Sewer Pipe Distributors Meet.

On December 13, the annual meeting of the Sewer Pipe Distributors was held at the Hotel Astor, New York, N. Y. The meeting was a very satisfactory one from every standpoint. President Arthur N. Pierson declined re-election on account of ill health, and James G. Lincoln, of Boston, Mass., was chosen to fill this office. E. S. Walton, of Youngstown, O., was elected vice-president, and J. C. Adams, of Pittsburgh, secretary-treasurer. Besides the officers, there were present: C. C. Classen, Baltimore, Md.; D. J. Kennedy, Pittsburgh, Pa.; W. W. Coney, Cincinnati, O.; C. N. Ray, Detroit, Mich., and Mr. Lewis, Boston, Mass.

Big Order for Vitrified Brick.

FORT SMITH, ARK., Dec. 17.—The Fort Smith Vitrified Brick Co. has received a contract from the Prairie Oil and Gas Co. to supply 1,000,000 brick for use in building pipe lines and pumping stations at Kinta, Okla., and DeQueen, Ark. The line is now being built from the famous Glenn pool field in Oklahoma to the big refinery at Baton Rouge, La. It will require about the same amount of brick for two more stations which will be built on the line south of Fort Smith.

Big Plant For Minnesota.

MASON CITY, Ia., Dec. 17.—A contract for the erection of the plant for the Southern Minnesota Brick & Tile Co., located at Austin, has been let to the Nelson Construction Co. of this city for \$175,000. The tile company is made up of moneyed men at Northwood, Austin and neighboring cities. The company is headed by W. H. Gleason, of this city. The plant will have a capacity of 2,000 cars per year. The company is capitalized at \$200,000.

Incorporations.

White Rock Gravel and Sand Co., Waco, Texas; capital \$15,000; incorporators: W. W. Hyde, William Kelly, Dan Wise and others.

Washed Gravel and Sand Co., Dayton, O., has increased its capital stock from \$20,000 to \$25,000. G. W. Ozias is president.

The following Retail Dealers Associations will meet the coming year:

Nebraska Retail Lumber Dealers Association at Lincoln, January 12-14.

Retail Lumber Dealers Association of Indiana, at Indianapolis, January 12-14.

Union Association of Lumber Dealers of Ohio, at Columbus, January 18.

Northwestern Retail Lumber Dealers' Association, at Minneapolis, January 18-20.

Ohio Builders' Supply Association, at Columbus, January 20-21.

Southwestern Lumber Dealers' Association, at Kansas City, January 25-27.

Tri-State Retail Lumber Dealers' Association, at Evansville, Ind., January 26-27.

Retail Lumber Dealers' Association of Pennsylvania, at Pittsburgh, January 27-28.

Kentucky Retail Lumber Dealers' Association, at Louisville, February 7-8.

Western Retail Lumber Dealers' Association, at Portland, Ore., February 14-16.

Illinois Lumber Dealers' Association, at Chicago, February 16-18.

Illinois Masons' Supply Association, at Chicago, February 16-18.

Wisconsin Retail Lumber Dealers' Association, at Milwaukee, February 23-25.

Mason Material Dealers' Association of New Jersey, on March 10.

Lumbermen's Association of Texas, at San Antonio, April 12-14.

RETAIL AND WHOLESALE

Dealers in Builders' Supplies Meet to Arrange For Better Business Relations.

In pursuance of the call issued by George W. Hotchkiss, Secretary of the Illinois Lumber Dealers' and Illinois Masons' Supply Association, a conference between the manufacturers of cement, lime and plaster and the retailers of these materials was held at the LaSalle hotel, Chicago, December 8th. There were about forty-five present and the meeting was called to order by Mr. Hotchkiss, who read the objects of the conference, which summed up five subjects to be discussed by the various interests. These were:

1. The relation that should exist between the manufacturer, wholesaler and retailer.

2. Who should be classed as a dealer?

3. Is the dealer entitled to any kind of protection from the wholesaler or jobber? and if so, to what extent?

4. What disposition should be made of inquiries received by manufacturers or wholesalers from direct consumers?

5. What class of consumers should properly be entitled to receive quotations and shipments from manufacturers and wholesalers?

Mr. Hotchkiss said in his paper that this convention was called in order that the difficulties incorporated in the handling of materials would, by friendly consideration, be overcome, and a thorough understanding of mutual advantage to all interests obtained. The retailer of supplies is established as a general distributor and must be the medium of communication between the producer and the consumer, therefore he is entitled to a fair compensation for his labor and investment. Mr. Hotchkiss suggested that, while no positive action should be taken at this particular time obligating any of the interests, he hoped that it would be the means of suggesting a line of thought which should be considered by all individually and in coming conventions. Then a more formal meeting of delegates could be held and a code of ethics promulgated agreeable to all interested in placing the distribution of builders' supplies on a harmonious plane.

In closing his remarks Mr. Hotchkiss suggested that a chairman and secretary be appointed, and James Paddock, of Pana, Illinois, president of the Illinois Retail Lumber Dealers' Association, was chosen chairman. S. A. Clemons, of the American Lumberman, was elected secretary.

Mr. Paddock suggested that the five subjects included in Mr. Hotchkiss' paper should be taken up and discussed separately. He said that the relations

of the various branches of the industries should be on a pleasant and equitable basis and that this meeting should determine what that basis was.

A. F. Hunter said that as the distribution of cement became more diversified, the standing of the retail dealer or lumberman became more important. Cement is rapidly taking the place of lumber, Mr. Hunter said, as is demonstrated in his own business. In his town, he said, whenever a large job comes up the competition for it is so strong among the manufacturers that the retailer is lost sight of, and it seems as if the best way to distribute cement which will bring the best returns with the least risk is through the retail dealer who is acquainted with all the local conditions.

Charles Glore, of Centralia, said he did not believe that the manufacturers were entirely satisfied with the methods of selling their output; that they would rather sell through an established dealer regularly than to sell a carload order occasionally to some unknown and unreliable man.

One of the principal objections raised by the retailers was the fact that anyone could write in to some manufacturers and procure quotations on a carload order. Many a contractor desiring a few barrels of cement for use will get quotations on a carload from the manufacturer, use what he needs and sell the rest among his friends or others in the town, much below the price that the retail dealer carrying a stock of material on hand, can possibly sell for. Also that this same man can buy cement at the same price as the dealer can. The contention of the retailer was that this should be eliminated, and the general opinion was that the dealer would rather see higher priced cement than very cheap prices. These dealers do not, at any time, ask to establish a price agreement. It is rather the idea of the retailers to establish a code of ethics and to sell through legitimate dealers.

E. M. Hagar, president of the Universal Portland Cement Co., lead the discussion from the manufacturers' standpoint and wanted a correct definition of legitimate dealer given.

In reply to this, Mr. Hotchkiss defined the definition of retailer as follows:

"A dealer is a man who has invested his capital, time and energy in the distribution to a local community of the goods which he has purchased from a manufacturer or wholesaler. He is entitled to the support of his local community against the competition of those from whom he obtains his supplies, upon which he must make a profit above his expenses.

"A wholesaler is either a manufacturer or one who handles large quantities of manufactured goods for sale in large quantities to the retailer as a distributor in smaller quantities direct to the consumer."

Mr. Hagar then suggested that a committee representing the retailers meet a committee of the National Association of Portland Cement Manufacturers and receive from them a thorough consideration of their proposition.

E. L. Cox said that, from the manufacturers' standpoint, to sell to the consumer brought the price down and thought possibly a code of ethics would help the situation considerably.

After a thorough discussion of the principal causes of unsatisfactory conditions, the conclusion reached was that there should be a meeting of the committees of the various interests to formulate a working plan and to bring the matter to a head. Mr. Hunter made the following motion:

"That the cement manufacturers be requested to appoint a special committee to meet a similar committee appointed by the retail dealers to formulate some reasonable code of ethics of interest to the trade."

This motion was seconded by C. B. More and carried. The meeting then adjourned.

The following representatives of the various interests were present:

Wholesalers.

- J. U. C. McDaniel, Chicago Portland Cement Co.
- F. W. Clayton, Chicago Portland Cement Co.
- E. L. Cox, German-American Portland Cement Co.
- E. M. Hagar, Universal Portland Cement Co.
- B. F. Atteck, Universal Portland Cement Co.
- E. A. Mallin, Sandusky Portland Cement Co.
- A. B. Nelson, Sandusky Portland Cement Co.
- A. H. Craney, Jr., St. Louis Portland Cement Co.
- C. B. Shifler, Garden City Sand Co.
- P. B. Beery, Sandusky Portland Cement Co.
- Gold Williams, Marquette Cement Manufacturing Co.
- W. F. Main, Chicago Portland Cement Co.

Retailers.

- H. H. Halliday, Cairo, Ill.
- Dan Macknet, Decatur, Ill.
- George F. Colton, Rockford, Ill.
- Charles A. Glore, Centralia, Ill.
- N. E. Holden, Danville, Ill.
- C. F. Jones, Stanford, Ill.; C. S. Jones & Son.
- R. G. Mackemer, Peoria, Ill.
- V. I. Clark, Sycamore, Ill.; North Side Lumber Co.
- C. B. Moore, Aurora, Ill.; Alexander Lumber Co. and C. B. Moore Lumber Co.
- I. J. Danforth & Co., Washington, Ill.

W. P. Lillibridge, St. Charles, Ill.; St. Charles Lumber Co.
 I. G. Heartt, Downer's Grove, Ill.; P. A. Lord Lumber Co.
 C. M. Packard, Shirland, Ill.; Shirland Lumber Co.
 A. H. Holcomb, Sycamore, Ill.; Holcomb Bros.
 J. W. Paddock, Pana, Ill.; Paddock Lumber Co.
 W. O. Houghton, Galva, Ill.; E. M. Houghton Lumber Co.
 W. F. Stevens, LaSalle, Ill.; Hunter, Stevens & Co.
 W. L. Mueller, Davenport, Iowa; Mueller Lumber Co.
 E. F. Hunter, Chillicothe, Ill.; H. E. F. Hunter.

Association Secretaries.

George W. Hotchkiss, Chicago; Illinois Lumber Dealers & Masons' Supply Associations.
 Arthur L. Holmes, Detroit, Mich.; Michigan Association Retail Lumber Dealers.
 H. C. Scarce, Chillicothe, Ind.; Indiana Retail Lumber Dealers' Association.
 J. H. Aspren, Lincoln, Neb.; Nebraska Lumber Dealers' Association.
 H. S. Adams, Chillicothe, Ohio; Ohio Retail Lumber Dealers' Association.
 Paul Lachmund, Milwaukee, Wis.; Wisconsin Retail Lumber Dealers' Association.
 W. G. Hollis, Minneapolis, Minn.; Northwestern Lumber Dealers' Association.

BUILDING SUPPLY MEN.

Dealers in Buckeye State Especially Have Had a Satisfactory Season.

WAUSEON AND BRYAN, O.

Wauseon and Bryan are surrounded by one of the greatest and richest dairy districts in the state of Ohio and it is not an exaggerated statement to say in the United States. The Van Camps have a factory in both towns where they receive the milk from the farmers, condense, bottle and sell it in all parts of the country. The farmer in these dairy districts has made great improvements in his cattle barns, milk houses, etc., using cement for floors, walls, foundations and watering troughs, which has increased the business of the builders' supply dealers in some instances threefold. The dealers in these towns have been doing a good business this year and feel that good times are here.

There is probably no state in the union which has responded more quickly to the return of prosperity than Ohio, and certainly in no section has the revival of business been more apparent. Not only are the farms rich and productive, but the farmers themselves have money and are not afraid to use it in the improvement of their holdings. The consequence is that local merchants, and especially those who handle the materials for making permanent improvements, are having a big business.

F. R. Smallman.

F. R. Smallman established his business of retail grocer, buyer and shipper of seeds and building materials, thirty-six years ago, in Wauseon. His retail grocery store at the corner of Fulton and Birch streets is the largest and best patronized in town as it always has been during its existence for over thirty years. Mr. Smallman's building material yard on Commercial street and the Lake Shore right of way, with three switch tracks from the Lake Shore running through the yard and its team tracks touching every point in it where material is stored, give it the facilities and the appearance of the yards in the large metropolitan cities of the United States. Its arrangement in every detail is perfect for handling its vast quantities of material economically and quickly. A new warehouse has been erected 100x25 feet in size, which has a storage capacity of over 3,000 barrels of cement, lime and plaster. The principal brands of cement handled in this yard are, Peninsular, Omega and Castalia Portland; lump lime in barrel and hydrate form from the Woodville White Lime Co.; plaster from the Toledo Builders' Supply Co., and the Grand Rapids Plaster Co., sewer pipe and fittings, wall coping, flue lining, fire brick, fire clay, etc., from the American Sewer Pipe Co.; vitrified building blocks from the National Fire Proofing Co., including a full and complete line of all kinds of building materials.

F. C. Smallman, the son of the founder of this great business in Wauseon, is the man under whose management it has been growing rapidly and steadily. Speaking of the marvelous increased demand for cement in the farming districts Mr. Smallman, Jr., said: "This increase has been annually fully fifty per cent greater than the year before, for the last four years. The farmers here being in the richest dairy section in the state of Ohio and in the whole territory covered by the middle states, have spruced up their barns, barn floors, are building silos, cement sidewalks in their grounds, and using cement where they formerly used wood. A few weeks ago I sold to one farmer a car load of cement which he used to build a 'bank barn.' A bank barn is built on the side of a hill; the lower part, or down-hill side, forms

a sub-basement used for sheltering cattle and stock. The superstructure is used for storing hay, grain and stabling horses. It fills the requirements of two ordinary barns on level ground. Business has been very good with us this year and I can see indications on every side that the people have recovered from the panic of two years ago and have full confidence again in the future, which means an era of prosperity which can not be held back."

H. H. Yarnell.

In Wauseon H. H. Yarnell is manufacturing cement building blocks, bricks, porch columns, lawn vases, shingles, etc., all cured by steam, and is also a dealer in cement, lime, sand, glass sand and crushed stone. He handles Lehigh and Wabash Portland cements, keeping in store in his warehouse about 500 barrels of cement and lime, which he delivers promptly with his own teams to any part of the city.

His output of cement blocks is 4,600 per month, which are mostly used for foundations in the farming districts surrounding Wauseon. The factory is located opposite the freight house of the Wabash railroad. His facilities for receiving and handling this building material are among the best in the city. He reports business good this year and rapidly increasing in the last sixty days. Mr. Yarnell and his father, Frank Yarnell, are large contractors and builders of artificial stone walks and all kinds of cement work.

Wauseon Lumber & Supply Company.

The Wauseon Lumber & Supply Company, with Dr. C. S. Campbell as president and G. C. Dudley secretary and treasurer, has its office and yard located at the corner of Willow and Zenobia streets. It was established four years ago. Two switch tracks run into the yard, one from the D. T. & I. and one from the Wabash Railway, which gives it facilities for receiving and shipping material among the best in Wauseon. Its warehouse, which is on one of these switch tracks, has a storage capacity of over 300 barrels of lime and plaster. The company handles hydrate from the Woodville White Lime Company and plaster from the American Gypsum Company, and sewer pipe and fittings, flue lining, fire brick, fire clay, etc., from the Robinson Clay Products Company. This company reports that business this year so far has been quiet, but it is now picking up very fast and indications point when the year is ended that it will have proved a better season than last.

E. E. Strayer.

E. E. Strayer, dealer in hay, grain, wool, coal and builders' supplies, has his office and warerooms on North Lynn street, Bryan, on the site of what is known as the "Old Keck Stand," and his yard which covers an acre of ground, on Wilson Street and the C. & N. railway. A switch track from this road runs alongside the yard and the warehouse, in which he stores 500 barrels of cement, lime and plaster. His facilities for receiving and shipping and handling this material from his yard are excellent. Mr. Strayer handles Peninsular Portland cement, lime in bulk, barrel and hydrate form, from the Kelly Island Lime & Transport Company, and plaster, the product of the American and United States Gypsum companies. His cement sales in the farming districts have increased fully 50 per cent every year for the last four years. Business with him was fairly good the first half of the year, but is now picking up fast and he has as much as he can attend to in furnishing customers with building material.

Henry Keck, who established this business fifty years and more ago, dealt in grain, wool, seeds, cement, lime and plaster before any railroad was built in Ohio and handled only imported Portland cement at \$6 and \$7 a barrel. After four changes in the firm name during the fifty years, E. E. Strayer is now doing a large business on the same site in new buildings at the "Old Keck Stand."

Superior Cement Roofing Company.

The Superior Cement Roofing Company, of Bryan, C. F. Sherman, H. M. and O. L. Kelly, owners, has its factory on the Lake Shore tracks with switch rails from this road running through the yard. The warehouse has a storage capacity of 600 barrels of cement. The brands of Portland cement handled are Lehigh, Castalia and Peninsular. It has an extensive retail trade in cement and also manufactures cement blocks for foundations and superstructures, porch columns and piers, fence posts, and cement sidewalk slabs. Its output is over 25,000 cement blocks annually. Fifty per cent of these blocks are taken by the farmers. The company has been in existence two years, is doing a good business and reports a great improvement in it since August. It also has a factory at Montpelier, Ohio, of about the same capacity. The office is in the Farmers' Bank Building, Bryan.

H. Poast.

In the old grist mill built fifty years ago at the corner of Center and Beach streets, Bryan, H. Poast is dealing in grain, hay, coal, cement, plaster and lime since 1906. He handles Universal and Wabash Portland cements, hydrated lime from Carey, O., and plaster from the American Cement Plaster Company. He has in storage constantly about 500 barrels of lime, cement and plaster. Facilities for handling this material are good. His trade in cement is increasing in the farm districts every year. Business, he reports, has been as good as last year so far, but prospects are now for a rushing trade the remaining months of the year.

DEFIANCE.

Building operations have been active in Defiance, and many public improvements, including paving of streets and laying of sewers, have been made during the summer months. Dealers in builders' supplies have done a good business this year and believe that the prospects are exceedingly bright. Farmers have harvested big crops of corn, oats and wheat and have been using more cement in making improvements on their farms than was ever known before.

P. Weigerding.

P. Weigerding, one of the oldest and most extensive dealers in building materials in Defiance, has been in business for over twenty-nine years. His yard and office are located at 503 and 511 Front street, including a warehouse with a storage capacity of 800 barrels of cement, lime and plaster. The drives in the yard touch every part where material is stored, including the warehouse, enabling economical and quick handling. Mr. Weigerding handles Universal and Castalia Portland cements; bulk lime in barrels and also the hydrate from the Ohio & Western Lime Company; plasters from the Grand Rapids Plaster Company, the American and United States Gypsum companies; sewer pipe and fittings, fire brick, fire clay, etc., from the Robinson Clay Product Company, and gravel, sand, common and pressed brick. A feature of the yard is the feed barn 84x132 feet with a ceiling 16 feet high. In this barn he has stabled at one time 114 horses. His charge for putting up a horse in this barn is 10 cents, and 15 cents if the horse is given hay. This feed barn is a great convenience to farmers who come to Defiance to trade. The average number of horses stabled here daily by farmers runs up to forty.

Mr. Weigerding reports a marked increase in demand for cement in the farming districts and says his business for the year has been good, with a perceptibly heavy increasing demand for all building material since the forepart of August.

M. B. Gorman.

M. B. Gorman is one of the oldest dealers in groceries and provisions in Defiance and also handles in his yard a full line of building materials. This yard is located at 500 to 508 Perry street. He established his business thirty-eight years ago. His facilities for handling building material are excellent, insuring prompt delivery with his own teams to any part of the city. He keeps in storage 750 barrels of lime, cement and plaster. The principal brands of cement carried are the Wabash and Diamond Portland cements; lime in barrel and hydrated from the Ohio & Western Lime Company; the products of the Grand Rapids Plaster Company, and sewer pipe and fittings from the American Sewer Pipe Company. He has a large trade in cement in the farming districts, which is increasing fast, while the city trade has been larger than last year and is booming this fall.

C. W. Houck.

C. W. Houck established his coal and building material yard at 618 Clinton street six years ago. He handles a full line of building materials and his facilities for receiving and handling this material in his yard are of the best. A switch track from the Wabash road runs alongside of his yard and warehouse, which has a storage capacity of 500 barrels. He handles Medusa Portland cement, lump lime in barrel and also the hydrate from the Ohio & Western Lime Company; the product of the Fishack Plaster Company, and sewer pipe and fittings. His trade in cement in the country districts is rapidly increasing every year. This year's business has been better than that of last, and for the last thirty days has been picking up to a marked degree.

A. C. Pessefall.

A. C. Pessefall is a large manufacturer of cement blocks, porch columns and piers. The cement blocks are mostly used for foundations, and a large percentage is used in the farm districts. Mr. Pessefall is also a prominent contractor, constructing cement sidewalks, building houses, putting in foundations and cellars. He established his factory in 1904. It is located at 860 Francis street, Defiance.

**Important Meetings of Clay Men.**

Contrary to the expectation of the manufacturers of clay products, an announcement is made that the annual convention of the National Brick Manufacturers' Association will be held in the East, instead of the South, as was generally expected. The convention will be held at the Fort Pitt hotel, Pittsburgh, Pa., during the week of February 6th to 12th, 1910.

Secretary Theodore Randall is busily engaged making preparations for the convention, and it is thought that if the Southern manufacturers had given sufficient encouragement, the convention would have been taken there.

Pittsburg, however, is the generally accepted meeting ground between the East and the West. It is easy of access on account of railroad facilities. The Fort Pitt hotel, where the convention will be held, is one of the best in the country and, as the management makes a specialty of caring for conventions, the house is well equipped to take care of this one, which is the noteworthy gathering of clay workers.

In conjunction with the convention, the National Paving Brick Manufacturers will hold their convention during the same week, and the American Ceramic Society, of which Professor Edward Orton, Jr., is the secretary, will hold its twelfth annual meeting at the same place, February 7th, 8th and 9th.

The Clay Products Association of America, which was formed this year at Rochester, will receive the consideration of the gathering.

Convention of Iowa Association.

The annual convention of the Iowa Brick and Tile Association will be held at Des Moines on January 12th and 13th. Preliminary arrangements for the program and entertainment of visitors are in charge of Secretary C. B. Platt. A number of topics for discussion have been suggested and Secretary Platt has invited the members to correspond with him and suggest topics that they would like to have taken up. A partial list of subjects to be discussed are as follows:

Iowa Freight Rates on Clay Products.
How to Promote the Building of Clay Fireproofed Dwellings.

The Greatness of Iowa's Drainage Field.
Some Practical Experience in Drying Brick and Tile. Resources of and Future Possibilities of the Iowa Clay Products Market.

Organization of Factory Production: the Economy Effect of Confining Plant to One Product.

Does Association Offer Any Benefits in the Establishment of a Purchasing Agency?

Recent Tests of Clay Products: Iowa State University Progress in Burning Clay Products.

Some of the Difficulties Met with in a Medium Sized Plant and How They Are Overcome.

Determination of Cost of Clay Products of Different Sizes and Weights; Its Importance in the Regulation of Selling Prices.

Pottery Making in 1908.

The value of the pottery made in the United States during 1908 was \$25,135,565, of which \$757,900 was the value of the ordinary red earthen flower pots, about the cheapest thing turned out in burned clay. In the production of pottery of all kinds, Ohio takes the lead of all the states, with New Jersey second and West Virginia third. However, thirty-seven states of the union have made reports on pottery manufacturers. How much Ohio leads in the industry may be seen in the fact that in 1908 it turned out almost \$11,000,000 of the total pottery product. The domestic product supplied 72.54 per cent of the domestic consumption, while on the other hand, \$983,760 worth of pottery was exported.

Rush Factory at Medicine Hat.

LEHIGH, IA., Dec. 18.—Warren Overpack, manager of the Alberta Clay Products Co., Medicine Hat, Canada, was in Lehigh recently in conference with James Campbell, president of the company. They went over matters of interest to the new Canadian company. Mr. Overpack reports that the work of building the large factory there is progressing nicely, even better than they anticipated at the first. They have a temporary building erected and the machinery placed for the manufacture of brick, which will be used in the construction of a mammoth sewer pipe factory.

Officers for Stoneware Merger.

PITTSBURG, PA., Dec. 20.—Officers have been elected by the Eastern Stoneware Co., as follows: C. W. Stine of White Cottage, president; Wilson Winters of Crooksville, vice president; E. L. Taylor of Crooksville, secretary; Frank Ransbottom of Roseville, treasurer and general sales-manager.

This company, which is a merger of all the principal stoneware interests in the East, will have its sales headquarters in Zanesville, Ohio, where Mr. Ransbottom will be in charge. These offices will be opened January 1.

The following manufactory are interested in the merger: Ransbottom Bros. of Roseville; Burley-Winters Pottery Co., A. E. Hull Pottery Co., Keystone Pottery Co., Star Stoneware Co. and the Crooksville Pottery Co., all of Crooksville; C. W. Stine Pottery Co. of White Cottage; Logan Pottery Co. of Logan, O., and other plants at Akron, O., and New Brighton, Pa.

Extracts Aluminum from Common Clay.

BOSTON, MASS., Dec. 18.—Milton Chase, of Haverhill, Mass., claims to have perfected a process of extracting aluminum from common clay. He did this, he says, in experimenting to secure the metal at a nominal cost for the construction of airships. The Chase formula for the extraction of aluminum has been tested by Walter C. Belcher, a well-known metallurgist, and on the latter's report a company is being organized in Boston to exploit the process. The main advantage of the Chase formula is said to lie in its cheapness.

Potters Association Elects Officers.

WASHINGTON, D. C., Dec. 18.—At the annual convention of the U. S. Potters Association, held December 8, the following officers were elected: Joseph Mayer of Beaver Falls, Pa., president; William Burgess of Trenton, N. J., first vice president; H. A. McNicol of East Liverpool, Ohio, second vice president, and C. C. Asbaugh, also of East Liverpool, secretary and treasurer.

President Mayer, in his annual address, congratulated the association on the revival of business in the past year. He attributed the prosperity to the continuance of a high protective tariff.

William Burgess, chairman of the customs committee, reported on the results of a special investigation covering the tariff and its enforcement. Mr. Burgess stated that undervaluation import frauds are decreasing, and expressed hopes for their elimination. He went into detail in regard to the new tariff in its connection with the pottery business, declaring the duties should be higher, as he claims the protection furnished does not compensate for the cheaper foreign labor.

Novelty Pottery Company Sold by Sheriff.

ROODHOUSE, ILL., Dec. 17.—The Novelty Pottery Co.'s plant, together with stock and some personal property on the grounds, was sold at sheriff's sale. The finished and unfinished ware and other personal property brought only \$151.75. The grounds and buildings were then put up and knocked off to J. V. Porter and other indorsers of the company at \$15,500. The personal property was also purchased by Porter and others, making \$15,651.75. The indebtedness amounted to \$16,027.79. The purchasers and indorsers will have to pay a deficit of \$376.04.

The plant has been idle for several months, and has suffered some depreciation in consequence, but it is said to be worth over \$25,000. Poor management is said to be the cause of the failure.

To Make Vitrified Brick.

LOS ANGELES, CAL., Dec. 16.—Construction of a plant for the manufacture of vitrified paving brick to have an initial daily capacity of 40,000 daily has been begun at Newmark, nine miles from Los Angeles, by the Mulford-Burke Brick Co., which has just been incorporated with a capital of \$100,000. Officers of the company are: President, J. K. Burke; vice-president, D. L. Burke; secretary, D. A. Emmons; treasurer, K. H. Grossmayer, a New York capitalist; general superintendent, L. Mulford.

Brick You Can See Through.

SALT LAKE CITY, UTAH, Dec. 16.—Mountains of silica sand, just north of Salt Lake, and of a variety from which, it is said, the very best of transparent brick may be produced, promise to open an important industry in this city in the very latest wrinkle in building materials.

ROCK PRODUCTS

DECEMBER 22, 1909.

**Figuring Forms For Plasterers.**

From one of our readers comes the suggestion that of all classes of trade the average employing plasterer has about as unsystematic a way of conducting business as could be imagined. This he says is because they are not only very careless, but thoughtless and have little regard for system. Except in cases where a large job is to be figured and for which specifications are sent out, few sets of plans are issued. The plastering contractor is invited to come to the architect's office and figure his part of the work. Here he works at a disadvantage and is obliged to hurry. He has neither the time nor the facilities for properly drawing off quantities and in most cases jots the figures down in a book to be computed later. In this hurry a man must be very accurate to get down every figure absolutely correct. He must thoroughly know every detail or he will get his quantities wrong. What is the result? He has a conglomeration of figures which mean nothing and how can he expect to get them summed up accurately unless he has some idea as to what they are? How many jobs are figured on the same basis? His profit on one may net him a reasonable figure, while on another he will make some trifling error which will wipe out all the profit on the whole job.

As a remedy for this our reader offers the following form, which could be printed and which contains points covering any ordinary straight run job:

Plastering quantities in
for Architect.
Ceilings.

First coat
Second coat
Third coat
On metal
On plaster board
On concrete

Walls.

Rendering
Second coat brick
First coat lath
Second coat lath
Third coat lath
On metal
Outside work :
Allowance for scaffolding
Allowance for heating
Allowance for repairing
Allowance taking off old work and removing debris
Allowance expenses out of town jobs
Lineal feet of cove angles
Lineal feet of metal angles
Lineal feet and girth of beams
Lineal feet and girth of moldings
Square feet columns and pilasters
Square feet Keene's cement finish, plain
Square feet Keene's cement finish, jointed
Square feet Caen cement finish, jointed
Square feet scagliola and marble imitation

Ornamental Work.

Modeling
Staff moldings
Cast ornaments
Arches

Description of Materials.

Lath
Mortars
Finishes
Number of yards in ceilings :
First coat
Second coat
Third coat
Metal
Plaster board
Concrete

Number of yards in walls :
Date of figuring

In using such a form as this with the specifications before him the contractor could put down the figures in the proper places and mistakes would then be fewer. This sheet could then be filed away for future reference and an absolute check thus kept on the job.

On a large job it would be hard to follow such a sheet, for there are many details which are not included or allowed for in this. Many of the larger contractors use a blank sheet and write each figure in after consulting the plans and specifications. In order to give the trade the best form possible by quantities which may be accurately drawn off the trade are invited to send in such forms to the editor of the Plaster department of ROCK PRODUCTS.

Dayton Stucco Co. Reorganized.

DAYTON, O., Dec. 18.—Complete organization of the Dayton Stucco Co. has been effected by the election of Daniel W. Iddings and Andrew S. Iddings to the board of directors. Andrew S. Iddings is treasurer,

and David I. Prugh, secretary; W. R. McKnight, president; John Werkowitz, vice-president and general manager. The new concern has absorbed the business of Mr. Werkowitz.

Start Gypsum Plant in Utah.

SALT LAKE CITY, UTAH, Dec. 16.—The Western Gypsum Co., which recently purchased the big deposits just north of Lovelock, announces through its general manager, H. G. Gould, that active work will be commenced within the next week or ten days. The company will ship a large tonnage of the product to the reduction plant at Reno, Nev. The company proposes to erect bunkers and several smaller buildings at Kodak. The bunkers will have a capacity of not less than 500 tons. Besides the bunkers an elevator, a crusher and a fifty-horsepower gasoline engine will be put in.

Tonnage Good at Fort Dodge.

FORT DODGE, IA., Dec. 18.—D. E. Roberts, sales manager of the Plymouth Gypsum Co., says, "Tonnage this year has been up to normal, although prices in the early part of the year were in a demoralized condition. I do not think, however, plaster men have suffered any more than other manufacturers of building materials. Everyone has had a low-price period in 1909. I look for 1910 to be the greatest year in building ever known."

Aerial Tramway at Fort Dodge.

FORT DODGE, IA., Dec. 17.—Construction of a tramway which is a decided innovation for the transportation of gypsum has been commenced by the Plymouth Gypsum Co., of this city, to supply both its mill and that of the Plymouth Clay Product Co. with raw materials. Some time ago President L. E. Armstrong, of these companies, purchased 420 acres of land across the river from the plaster mill, as it was found to contain rich deposits of gypsum, clay and coal. It was the purpose of Mr. Armstrong to utilize these materials at once, and to transport them to the mills he devised the plan of constructing the aerial tramway. The contract for the erection of this was awarded to the Consolidated Tramway Co., of Roanoke, Va., and it is expected the work will be completed in a short time.

The style of tramway to be installed is something entirely new. Wire cables are used and suspended on towers from twelve to sixty feet in height, according to the lay of the land. One span will be 600 feet across the river and the others of a lesser distance. The cars that travel upon this tramway and carry the material will have four wheels. There are two tracks, one to carry the loads to the plants and the other to carry the empty cars back to be re-filled. In the center of these two tracks is a running cable that travels at the rate of 300 feet per minute and upon this cable the cars are gripped. When a car is loaded it is simply pushed onto the main line, the operator fastens the grip to the cable, and immediately the car travels at the speed of the cable. The principle of this line is similar to the old style of grip cable cars. The cars will hold about 1,500 pounds of material.

In connection with the line will be two or three passenger cars, that will carry the men across the line. The cost of delivering the material over a line of this kind is nominal, less than two cents per ton.

The carrying capacity of the new tramway will be large, permitting of the transfer of 600 tons in eight hours. Its construction will be so substantial that it can be used both for the transfer of coal and of gypsum. This will make an ideal delivery of the raw product. The clay will be dumped about 25 feet above the floor of the clay shed, high enough to permit of the filling of the entire shed by automatic dumping of the cars which travel on the tramway. When the gypsum rock is to be used from across the river, the same method of dumping the rock will be used. The tramway will be high enough at the gypsum mill to permit of the rock being dumped automatically into the rock hopper, requiring no handling.

The presence of sewer pipe clay or gypsum, in the land, was not known when the land was purchased, but prospecting has been going on there for the past sixty days or more, and clay has been found that is believed to be the best that has been discovered in this section of the state for the manufacture of sewer pipe, wall coping, flue lining, vitrified drain tile, conduits, paving brick, and so on.

Stripping is going on now at two points on the farm, removing the surface dirt from the clay so as to have some clay uncovered before the ground freezes too deep. Drilling is now being carried on and already seven bore holes have been put down to test the gypsum. Thus far all borings have shown a very fine vein of rock and it lies in a uniform and thick bed. From present indications it would appear that there are at least 300 acres of the 450 of the

farm underlaid with workable and good thick gypsum, and it can be mined by a tunneling.

It is also the intention of Mr. Armstrong to carry on some prospecting this winter for coal on this piece of land, and if the coal vein is sufficiently thick to permit it to be worked, it will be worked and the same tramway utilized in bringing the coal over to supply both plants.

Recently Incorporated.

SOUTHWEST PLASTER CO., OKEEPEE, OKLA.; \$50,000 capital; incorporators, T. J. Connelly, J. H. McCallum and E. F. Cress.

Fire Destroys Guilford Plaster Mill.

GREENSBORO, N. C., Dec. 18.—The plant of the Guilford Plaster and Cement Co. was totally destroyed by fire November 23. The loss is estimated at \$40,000, with about \$20,000 insurance.

Uses Gravel For Track Ballasting.

ROCK ISLAND, ILL., Dec. 18.—The Rock Island Southern has begun the work of laying a line of track into the gravel pit just west of Milan. This pit is to be the source of supply for the ballasting to be used on the new track. There is a stretch of twenty-five miles to be ballasted, and a crew of 100 men will be put at work.

New Gravel Plant at Minneapolis.

MINNEAPOLIS, MINN., Dec. 18.—F. M. Henry has just put into operation at McNair Park, just outside the city limits, a new gravel washing plant. It is modern in every respect and has a capacity of 600 tons for ten hours. The J. C. Buckbee Co., of Chicago, designed the plant and it was erected under its supervision.

Baltimore Men Buy Sand Land.

BALTIMORE, MD., Dec. 18.—For the purpose of engaging in the sand business Nelson Perin and Henry P. Bridges have purchased a tract of land at Berkeley Springs, W. Va., at a cost of \$60,000 from the estate of the late Robert Bridges, father of Mr. Bridges. Preparations have been made to erect a large mill and pulverizer on the site.

Western Canada Gets Washing Plant.

VANCOUVER, B. C., Dec. 16.—The growth of the gravel industry is illustrated by the fact that the J. C. Buckbee Co., engineers of Chicago, have recently designed and now have under construction a 600-yard gravel plant for F. M. Deeks at a point some sixty miles north of this city, on tidewater. This is the first gravel washing plant, to our knowledge, to be established in western Canada.

Syracuse Company Increases Its Holdings.

SYRACUSE, N. Y., Dec. 17.—The Syracuse Wall Plaster Co. has purchased of C. G. Haendle & Son property in Lodi street, adjoining the company's plant, with a frontage of 250 feet. It will be used for storage purposes. This purchase of property gives the Syracuse Wall Plaster Co. a frontage of 550 feet in Lodi street, which takes in the entire block from Center to Wolf streets with the canal on one side and the railroad on the other.

Elgin Man Invests in Gravel.

JACKSONVILLE, ILL., Dec. 20.—Dr. P. F. Gillett of Elgin has recently acquired an interest in a gravel company which owns an extensive plant near Elgin and more than two hundred acres of gravel pit. The gravel occurs along with a moulding sand, which is of such value that the cost of stripping is eliminated. The plant is located on the Northwestern road and a favorable freight rate makes Chicago an accessible market.

New Sand Company in Wisconsin.

JANESVILLE, WIS., Dec. 18.—With the organization of the Wisconsin Sand & Gravel Company, composed of three Rockford men, J. Rubin, George Rubin and J. H. Krause, and S. W. Rostein, of Janesville, the old Janesville Cement Post Co. goes out of existence and its plant, which was built to the south of the city for the manufacture of cement posts, will be converted into other uses. The property has a building 375 by 85 feet and includes twenty acres of land, eight of which are solid sand in a bank some sixty-five feet high. The new company will sell the sand.



Model Gravel Washing Plant.

The largest and most modern gravel washing plant in the Chicago district was placed in operation in August last for the Lake Shore Sand Co. by the engineers and builders, the J. C. Buckbee Co., of Chicago. This plant was designed for a capacity of 2,000 yards, or about 3,000 tons per day of ten hours, but has been shown to be capable of exceeding this output some twenty-five percent in normal working. The plant is located on the Chicago & Northwestern railroad in the Fox River valley, some thirty odd miles from Chicago and about equally distant, two and a half miles, from the villages of Algonquin, Crystal Lake and Cary, Ill. The product of the plant is normally the four grades of gravel called for by the Chicago market, and known as "coarse concrete material," "fine concrete material," "roofing gravel," and "torpedo sand," although it is arranged to furnish in addition to the above railroad ballast and plasterer's sand.

The property of the Lake Shore Sand Co. approximates two hundred acres, and the deposit of gravel varies from 25 to 40 feet in depth, practically all lying above the water level. The overburden of soil is thin, averaging only in the neighborhood of five feet in thickness, and is removed with steam shovels and disposed of to the railroads as filling material.

The gravel is excavated with steam shovels and hauled to the plant in Hart ballast cars drawn by switching locomotives. All of the pit track work is systematically laid out, giving curves of large radius and easy grades, both of which contribute largely to the general efficiency in operation.

The general run of gravel is small size, practically eighty per cent passing a three-inch ring on being screened, but in places the pit runs somewhat coarser and occasionally boulders up to 12" and 15" in size are encountered. The gravel carries but little foreign matter and is washed principally for the purpose of sizing and grading for the market. The washing plant is located between two loading tracks running parallel with the Chicago & Northwestern main line, the power house setting across the inside loading track from the washing plant, and the main conveyor running at right angles to the tracks back toward the pit. The ballast cars, on arriving at the plant, run directly over and discharge the raw gravel into a concrete feeding hopper of some fifty yards live capacity, sunk flush with the ground level, thus releasing the cars immediately and permitting their returning at once to the steam shovel, and also providing a steady feed for the washing plant pending the arrival of gravel from the pit. The gravel flows from a gate in the base of this hopper onto a 36" belt conveyor, set at an angle from the horizontal, thus elevating while conveying the gravel to the top of the washing plant. On being discharged from the head of the belt conveyor, the gravel is divided into two equal streams and flows to head screens of the plant. These are of the Gilbert type, double jacked; that is, each carries an inner and an outer screen surface and are the largest screens of the type ever built, the outer being 72 inches diameter at small end by 93 inches diameter at large end, while the inner screen is 48 inches by 72 inches in diameter by 96 inches in length. Both screen surfaces are securely bolted to the heavy cast iron head of the screens, which is in turn carried by a very heavy steel shaft, running in extra long bearings and chain driven from the main lay shaft of plant.

Following these two screens are four more of the same type and size, but provided with successively smaller perforations. The oversize from the first screens falls through a chute to a small bin located between the crushers under the main conveyor trestle across the loading track from washing plant. The crushers are two in number, being of the No. 5 McCully gyratory type, and set upon concrete foundations on both sides of the feeding bin, in order that the oversize material may be divided between them or diverted entirely to one in case of accident or repairs to the other.

Setting in front of and between the crushers is a set of 36x16 crushing rolls for breaking down any of the several finished sizes of the plant to a smaller size when the market demand is for an excess of any size beyond the normal production of the plant. These rolls are fed by a variable speed conveyor extending over the loading track back to bins of plant. The product of both crushers and rolls falls to a 24-inch belt conveyor, inclined from the horizontal

and setting in the same framework as main conveyor, but conveying and elevating in an opposite direction. This conveyor delivers the crushed material onto the main conveyor belt at a point about midway of its length, and it is then returned to the head of the plant by the main conveyor, to be sized and deposited into the bins for shipment.

The screens are all mounted in a heavy truss type framework of the design regularly used by the J. C. Buckbee Co. for washing plants, this framework being carried by a vertical frame outside of the cribbed bins—this latter frame serving not only to support the screens directly from the foundations and independent of swelling or contraction of the bin cribbing, but also acting as buckstays or binders for the crib work, permitting the use of much lighter cribbing in the bins and making the most economical type of structure for this purpose that has been devised to date.

The bins have a total live capacity of 1,200 yards and are provided with 14 loading chutes of the swinging counterbalanced type, on both sides, for loading the washed gravel into the railroad cars—all of the chutes and their gates being controlled and operated from a balcony at the gate level running about all four sides of the bins.

Both crushers, the rolls and return belt conveyor are driven by belt from a heavy line shaft running in pillow blocks mounted on concrete piers directly in front of the crusher foundations. The screens and head of main conveyor are driven from the same shaft

consists of two 150 h. p. Goss water tube boilers, set in a double setting, fronting toward the loading tracks of the plant, as upon these tracks the coal is brought in. Ample firing room is provided in boiler room while a sufficient space for considerable coal storage is provided between side of power house and tracks, access to this coal being afforded by large double swinging doors in side of boiler room. The gases from boilers flow through a brick lined steel flue to a 4-foot by 100-foot steel stack setting back of power house. Alongside of boilers on side next engine room partition is a 36" by 9' 0" Baragwanath open horizontal feed water heater, and in front of this are two 5½x3½x7 Burnham feed pumps, either of which is alone capable of feeding the boilers, two being provided in order that a proper feed may be given in case of accident or repairs for either pump. The exhaust steam from the main pump in engine room and that from the feed pumps flows to the Baragwanath heater, and serves to heat the feed water for boilers. The open type heater removes much of the impurities in the feed water before same flows to boilers, this depositing in trays, which are easily removed and cleaned as necessary.

All live steam piping is carried overhead in power house and covered to prevent condensation. All exhaust and water piping runs in trenches in the cement floor of power house, these trenches being covered with removable checkered cast iron plates, which give a very finished appearance to the plant and provide immediate access to all piping.



WASHING PLANT OF THE LAKE SHORE SAND COMPANY, NEAR ALGONQUIN, ILL.

by an inclined American system rope drive. All pulleys and clutches on this shaft are provided with friction discs in order that any machine may be stopped or started independently of the others. The line shaft extends through the end wall of power house into the engine room, where it is driven by an English system rope drive from the main power engine of the plant. The engine is of the Corliss type, having a cylinder 16-inch bore by 42-inch stroke and developing 250 horsepower at 100 R. P. M., running condensing. All of the exhaust steam from the engine flows to a 9" Baragwanath siphon condenser, setting some 35 feet above ground level outside the end wall of power house. This condenser is supplied with water by the same pump that forces water to the head of washing plant, and the condensed steam and condensing water coming from condenser flows from the hot well back to the supply pond of plant, about 200 feet from power house.

The main pump supplying water to washing plant and condenser is a Burnham compound, having steam cylinders 10" and 16" diameter by 16 inches stroke, and a water cylinder 12 inches diameter, giving a capacity of 1,000 gallons per minute against 100 feet head. This pump draws its water from the general supply pond of plant through a 12-inch suction line. The pump sets alongside the main engine in power plant and is supplied with steam from the main steam header. In the engine room is also a 25 k. w. generator supplying current for lighting the entire works, this generator being driven by belt from the main line shaft.

The engine and boiler rooms, while under the same roof, are separated by a tight partition, to keep the dust and dirt of the boiler room away from the engine, pump and generator. The boiler equipment

The interior of the engine room is finished with matched lumber to protect the machinery from the dust of both the boiler room and the weather, and is painted black for some five feet in height on the walls, as this color does not show the dirt and may be easily cleaned. The remainder of the walls and ceiling are painted a light blue in order to give a good lighting effect. The telephone and shipping clerk's desk are located in the engine room, in order that either the engineer or clerk may always be in hearing to receive orders from the main office or customers.

The entire plant is most complete and modern in every respect, and while the investment is somewhat greater than has been usual in gravel washing plants in the past, it is more than warranted by the economics realized in operation. This plant is also an excellent illustration of the growth of the comparatively small industry of gravel production of a few years past into one of large proportions today.

Plans for this plant were begun by the J. C. Buckbee Co. in January, construction work starting in March, and the plant placed in operation about the first of August, since when it has run steadily and proven a source of great satisfaction and profit to its owners and a credit to its builders.

Business Good this Year.

BOWMANSTOWN, PA., Dec. 18.—Maurice Bowman, who has a sand plant here, says: "The sand business in 1909 has been very good, and even at this late season I am still busy. I am making considerable changes and improvements in my crushing plant, so that I may have a greater output in 1910." Besides moulding sand, Mr. Bowman produces building and concrete sand and stone.

CEMENT

ANNUAL MEETING.

Cement Men and Women Have a Harmonious and Interesting Meeting in New York.

The annual meeting of the Association of Portland Cement Manufacturers was held in New York December 13th, 14th and 15th at the Hotel Astor. In point of enthusiasm and attendance it stands pre-eminent. The interest in all the sessions was very keen and the interest manifested at all the meetings showed a deep undercurrent of feeling over the situation. This meeting marked the retirement of John B. Lober from the president's chair amid feelings of regret expressed by everybody. Mr. Lober has been an ideal presiding officer and his rulings and decisions were always marked by fairness. He took a deep interest in the affairs of the association at all times.

The sales managers held their meeting on Monday. A. H. Craney was elected president, vice A. L. Moyer, and C. L. Johnson was re-elected secretary. The executive committee met the same night.

Tuesday was the first day's regular session. John B. Lober was in the chair and Percy Wilson performed his accustomed duties as secretary. One of the principal things accomplished was the raising of the dues in order to carry on the present work of the association now so successfully inaugurated.

Manufacturers producing less than 500,000 barrels per annum will hereafter pay \$200 a year. Those producing 500,000 barrels and up to 1,500,000 will pay \$400, and those manufacturing 1,500,000 or more will pay \$600.

This will give the association a larger capital and distribute the assessment more equitably than heretofore.

Meetings will hereafter be held only twice a year, instead of quarterly. They will be in June and December. The summer meeting will be held in the West at a point yet to be determined. There were several places mentioned, among them St. Louis, Kansas City and Denver, or possibly some watering place, such as Eureka or Colorado Springs.

Election of officers resulted in the selection of W. S. Mallory to the president's chair. Some changes were made in the personnel of the Executive Committee, which is now as follows: John B. Lober, chairman; E. R. Ackerman, George E. Nicholson, T. H. Dumary, Edward M. Hagar, W. H. Harding, Robert W. Lesley, Conrad Miller, George S. Bartlett, W. S. Mallory, Charles H. Zehnder, Bethune Duffield, W. C. Kent, A. H. Craney, Jr., and R. W. Kelley.

Percy H. Wilson was re-elected secretary and highly commended for the fine work he is doing in this capacity.

The Wednesday session was in the nature of an open meeting and was presided over by W. S. Mallory, the president. Robert W. Lesley gave an interesting discussion of the work accomplished by the German Portland cement manufacturers, and also the results of tests made in this country. The paper was long and full of data and figures interesting to the manufacturer of Portland cement.

In the absence of Richard L. Humphrey, who is in Europe at present, Professor S. B. Newberry presented a very able paper on "Cement Testing." Logan W. Page, chief of the Bureau of Roadways, Washington, D. C., was next introduced by President Mallory, and read a very interesting paper on the subject of "Concrete for Roadways." The last paper was by Benjamin A. Howes, a prominent construction engineer of New York, who gave an illustrated lecture, using the stereopticon, and showing what he and others have accomplished in the treatment of concrete surfaces, both exterior and interior, coloring, unique and original architectural effects in homes and ornamental structures. These views were colored and showed startlingly original conceptions in this character of work, bringing forth the unstinted admiration and thanks of the cement men.

The Annual Dinner.

The annual dinner as usual was a brilliant affair. One hundred and four cement men sat down at the festive board. President Mallory presided in a happy manner, and Benjamin F. Affleck acted as master of ceremonies. Those who responded to toasts were Messrs. Lober, Lesley, Kittrell, Bartlett, Ramsey, Hagar, Goodell, Dumary and Duffield. Between each speech there was a song. Springer, of the Vulcanite sales force, led the singing. John B. Lober, the retiring president, was presented with a hand-

some gold watch by members of the association. Quite a number of letters, received by the association regarding the retirement of President Lober, will be bound and form a souvenir of the occasion.

The Attendance.

Alma Cement Co., Wellston, O.—Chas. H. Zelinder, E. D. Wickes and D. S. Hoover.

Ash Grove Lime & Portland Cement Co., Kansas City, Mo.—W. B. Hill.

Alsea's American Portland Cement Works, New York—Robert S. Sinclair and W. P. Corbett.

American Cement Co. of New Jersey, Philadelphia, Pa.—Robert W. Lesley, R. E. Griffith, Charles Camm and Wallace King.

Bath Portland Cement Co., Bath, Pa.—George E. Roydhouse, F. M. Hoover and Mr. Horner.

Chicago Portland Cement Co., Chicago—Norman D. Fraser, D. D. Drummond, J. U. C. MacDaniel and H. S. Turner.

Clayton Cement Manufacturing Co., Philadelphia, Pa.—W. H. Harding, Charles M. Saeger, H. S. Hartzell, J. F. Twamley and J. C. Detwiler.

Dexter Portland Cement Co., Nazareth, Pa.—Conrad Miller, John A. Miller, R. W. Hilles and Joseph Brobst.

Dewey Portland Cement Co., Kansas City, Mo.—F. L. Williamson.

Diamond Portland Cement Co., Cleveland, O.—F. L. Alcott and L. A. Reed.

Edison Portland Cement Co., Stewartsville, N. J.—W. S. Mallory and E. Meyer.

Glens Falls Portland Cement Co., Glens Falls, N. Y.—S. B. Bayle and F. W. Douglas.

Helderberg Cement Co., Albany, N. Y.—T. H. Dumary and C. J. Ramsey.

The Hecla Co., Detroit, Mich.—J. F. Bush and A. Beck.

Iola Portland Cement Co., Iola, Kan.—George E. Nicholson.

Lawrence Cement Co. of Pennsylvania, Siegfried, Pa.—E. R. Ackerman, L. V. Clark and O. S. Johnson.

Marquette Cement Manufacturing Co., LaSalle, Ill.—T. S. Dickinson and William Dickinson.

Thomas Millin Co., Wayland, N. Y.—Deanne Millen and W. H. Wiltse.

Maryland Portland Cement Co., Baltimore, Md.—Harry B. Warner.

Nazareth Cement Co., Nazareth, Pa.—A. W. Paige.

New Actna Portland Cement Co., Detroit, Mich.—John A. Myers.

Northampton Portland Cement Co., Stockertown, Pa.—J. A. Setz and H. A. Schaffer.

Northwestern States Portland Cement Co., Mason City, Ia.—J. W. Shove.

Oklahoma Portland Cement Co., Ada, Okla.—A. L. Beck.

Pacific Portland Cement Co., San Francisco, Cal.—Wakefield Baker.

Peninsular Portland Cement Co., Jackson, Mich.—J. W. Shove.

Penn-Allein Portland Cement Co., Allentown, Pa.—W. R. Gaeger, W. E. Erdell and J. A. Sigmund.

Pennsylvania Cement Co., New York—W. N. Beach, R. E. Bonner and A. H. Aker.

Phoenix Cement Co., Nazareth, Pa.—William Turner, G. W. Laub and Herbert Fetter.

Sandusky Portland Cement Co., Sandusky, O.—A. St. J. Newberry, S. B. Newberry and P. B. Beery.

St. Louis Portland Cement Co., St. Louis, Mo.—A. H. Craney.

The Superior Portland Cement Co., Cincinnati, O.—Justus Collins, J. B. John and C. F. Harwood.

Universal Portland Cement Co., Chicago—E. M. Hagar, Morris Metcalfe, J. G. Bergquist, B. J. Ameek, B. H. Rader and J. C. VanDoorn.

United Kansas Portland Cement Co., Iola, Kan.—George E. Nicholson.

Virginia Portland Cement Co., New York—R. W. Kelley and W. W. Warren.

Vulcanite Portland Cement Co., Philadelphia, Pa.—J. B. Lober, W. R. Dunn, A. M. Moyer, W. D. Lober, T. G. Barr and S. W. Hartwell.

Western Portland Cement Co., Milwaukee, Wis.—Geo. S. Bartlett.

Western States Portland Cement Co., Jackson, Mich.—J. W. Shove.

Whitehall Portland Cement Co., Philadelphia, Pa.—W. C. Kent and Howard B. Green.

NOTES OF THE CONVENTION.

Among the prominent machinery and supply men present were the following: Horace G. Kimble, Kent Mill Co., New York; H. B. Eldridge, The Bradley Pulverizer Co., Boston, Mass.; William R. Glasgow, Taylor Iron & Steel Co., High Bridge, N. J.; Thomas Fuller, H. G. Barnhurst and Mr. Weaver, Lehigh Car, Wheel & Axle Works and Fuller Engineering Co., Catasauqua, Pa.; Thomas M. Magiff, Atlas Portland Cement Co.; Paul Jandernal, Lehigh Portland Cement Co., Leslie J. Bennett, Buffalo Cement Co., Buffalo, N. Y.; C. W. King, The H. Wales Lines Co., Meriden, Conn.; William H. Ford, Wm. S. Hartrafn Co., George S. Emerick, Nazareth, Pa., and A. M. Bates, Bates Valve Bag Co., Cleveland, O.

Paul Jandernal, one of the Lehigh's crackjack salesmen, has been laid up with an attack of pneumonia in New York for several weeks, but is now convalescent and will soon go back to his old stamping grounds in Ohio. He was in attendance at the sewer pipe convention in New York last week but was not quite up to his usual good form. His many friends wish him a speedy recovery.

William H. Ford is back from a hunting trip in the northern wilds of Canada, none the worse for his experiences, which make "Teddy" seem like a dime novel hero by comparison. It seems that the festive moose is a bird (or is it an elephant?) that lives somewhere up North "away from the haunts of men." To capture or shoot this elusive creature requires considerable skill and pluck, both of which

Mr. Ford has in large quantity. Mr. Ford walked 50 miles on snow shoes with the thermometer away (we do not know how far) below zero and got his moose. The exact spot where this aforesaid event occurred was 370 miles due north of Montreal. It seems, however, Mr. Ford was not allowed to bring home the horns or the meat with him, so his friends naturally are somewhat disappointed. There is a law to this effect up there which our good friend Ford did not "wot" of, so therefore he can not prove his claim and like our other friend Dr. Cook, who discovered the Pole, has run against a few doubters. Some people have been mean enough to say that he found the horns and bought the meat.

Thomas M. Magiff, one of the best known of the Atlas salesmen, entertained a few friends at the New York Athletic Club. As an entertainer Tom is in a class all by himself, for there is no one who can order a dinner quite so well.

Harry B. Warner, was mistaken for Puck in his full dress suit. Harry is right there when it comes to the cement game, for there is no better posted man in the business. He has made good as every one thought he would and no one but whom is heartily pleased to know it.

Percy H. Wilson, the secretary, is the live wire of the cement business. Knowing what to do and when to do it is the secret of success in any kind of business, and if there ever was a courteous gentleman who could beat Percy at it, we would like to meet him.

Canadian Combination Lowers Prices.

NEW YORK, Dec. 18.—Although there is a \$30,000,000 cement combination in Canada no signs of "trust" workings as known in this country are apparent. On the contrary in every detail it presents the antithesis of American trust methods, as is shown by the fact that its net earnings amount to more than six times the interest on the bond issue and to half a million dollars more than the interest on all its obligations. Furthermore, although the consumption of cement in Canada has doubled in the last four years, the price is now 10 per cent lower than the average for the last five years.

New Plant for the Norfolk Co.

NEW YORK, Dec. 18.—The Norfolk Portland Cement Co. has awarded contracts for the construction of its new plant on the southern branch of the Elizabeth river near Norfolk, Va. This plant will comprise a building 600 feet long and 225 feet wide, of steel construction and costing about \$150,000, with cement-making machinery, boilers, engines, etc., costing about \$500,000. Several months ago the organization of this company with a capital of \$850,000 was effected. It is a branch of the American Cement Co., of Philadelphia. R. E. Griffith is president of the Norfolk company, with offices in Philadelphia, Pa.

Protest Against Cement Freight Rates.

PHILADELPHIA, Pa., Dec. 20.—At a meeting of the joint committee representing the various trade bodies interested in the use of cement, it was decided to consult counsel with the purpose of bringing action against the railways for discrimination in freight rates. From the cement plants to Jersey City the rate is 80 cents, ostensibly in shipments for exports, the local rate for home consumption being \$1.10, but it is known that the 80-cent rate applies to all cement shipments, regardless of destination. Philadelphia is twenty miles nearer the cement plants than Jersey City, but the rate to this point is \$1.35. It is against this discrimination that the builders, contractors and property owners are protesting. The committee empowered to seek the advice of an attorney consists of Finley Acker, of the Chamber of Commerce; Samuel F. Scattergood, of the Commercial Exchange; William M. Coates, of the Board of Trade; W. B. Irvine, of the Builders' Exchange; E. J. Lavine, of the Maritime Exchange; Cyrus Bergener, of the Bourse, and Joseph W. Steele, of the Master Builders.

Cement Co. to Build Railroad.

LEWISTON, Me., Dec. 17.—Not only will the New England Portland Cement Co. expend a great deal of money in the construction of the cement plant and the lime burning equipment, but it will also construct a railroad. The charter for this road, the R. & T., was granted by the legislature last winter. This road will be along similar lines to the Limerick railroad, which now hauls the limestone from the quarries to the kilns of Rockland, Rockport and Camden, and for the same purpose.

LITTLE CLINKERS.

The great plant of the Universal Portland Cement Co., at Buffington, Ind., is to have its capacity increased so as to produce 6,000,000 barrels per year. The Eastern plant of the same company, located at Universal, Pa., will begin very soon to operate with an enlarged capacity, the extensive improvements that have been going on for some time being about complete. It will run at 10,000 barrels daily capacity.

The Southern California Cement Co., Riverside, Cal., has decided to increase its rock crushing capacity by the addition of a No. 4 Gates crusher, with a set of crushing rolls and the accompanying screens, elevators, etc. This will secure a better balance at the raw end and incidentally increase the capacity.

Work on the million barrel plant of the Tidewater Portland Cement Co., at Union Bridge, Md., is said to have progressed far enough to indicate that it will come into bearing before the end of next season. Besides its standard Portland the company will make a white cement and also hydrated lime.

The Wolverine Portland Cement Co.'s plant at Quincy, Mich., is having extensive improvements installed. The rotaries are being lengthened to 120 feet in length, which will largely increase the output of the plant.

The Fredonia Portland Cement Co., Fredonia, Kan., will make extensive improvements in its raw grinding side. It recently placed an order with the Allis-Chalmers Co. for the necessary machinery.

Shareholders of the Whithall Portland Cement Co. will hold a special meeting at Philadelphia, February 7 next, to vote on a proposed increase in the capital stock.

Trustee for Chanute Cement Co.

CHANUTE, KAN., Dec. 18.—Seth G. Wells has been appointed trustee for the Chanute Cement & Clay Products Co. This action was taken at a meeting of the creditors. Wells is already the official receiver in bankruptcy, having been named by Judge Pollock, of the U. S. court, several weeks ago. In his capacity as trustee he will represent the unsecured creditors. The bondholders had agreed upon R. I. Allen, but were outvoted, although they represented holdings of over \$700,000. The company was capitalized at \$4,500,000, and had put out a bond issue of \$2,000,000.

Bonner Cement Co. to Resume.

KANSAS CITY, Mo., Dec. 20.—The directors and stockholders of the Bonner Cement Co. at Bonner Springs have agreed upon a reorganization plan and the plant, now in the hands of a receiver, will be reopened soon. The plant is worth about \$800,000 and has an indebtedness of \$170,000.

Pennsylvania Man Goes to Kansas.

ALLENTOWN, PA., Dec. 20.—H. S. Ritter, formerly of this city, has been appointed superintendent of the Great Western Portland Cement Co., at Mildred, Kan., capitalized at \$3,000,000. While here Mr. Ritter was a representative of the Lehigh Car Wheel and Axle Works, of Catasauqua, manufacturers of machinery used in the making of cement. After leaving here he went to the Ash Grove Lime & Portland Cement Co., of Chanute, Kan.

Vulcanite Company Engages New Offices.

NEW YORK, Dec. 20.—After January 1 the offices of the Vulcanite Portland Cement Co., for years located at 949 Broadway, will be located in the Fifth Avenue building, where it will have a suite of six offices on the eleventh floor.

Thomas Millen Co. Sells Out.

WAYLAND, N. Y., Dec. 18.—The cement plant at this place, which for the past sixteen years has been owned and operated by the Thomas Millen Co., of Syracuse, N. Y., has just been sold to the Wayland Portland Cement Co.

The Wayland Portland Cement Co., with a capital of \$30,000, was organized by local business men, and the officers are: John Kimmel, president; F. K. Smith, vice-president; F. C. Lander, treasurer, and O. F. Kiefer, secretary and manager.

It is the aim of the Wayland Portland Cement Co. to begin operations about January 1.

**SAND-LIME MEN.****Manufacturers of Products in This Line Have an Enthusiastic Meeting at Buffalo.**

The sixth annual convention of the National Association of Manufacturers of Sand Lime Products was held at Buffalo, N. Y., December 6 and 7, at Hotel Statler. It was by far the most progressive and important meeting that the association has ever enjoyed. The attendance, so far as numbers were concerned, was hardly better than the meetings of the past, but the personnel of the convention was representative of the industry in all sections of the United States, as well as the Dominion of Canada. The entire membership is alert to the possibilities and opportunities now before the organization, with the accumulated information, material and records of cooperative effort in the work of the association in the past.

The future of the work for this reason becomes of more practical value to the members of the association, and during the convention at Buffalo definite steps were taken to bring the work of the association into more practical contact with the operating manufacturers. Perhaps there is no better way to express the sentiment of the meeting than to present the opening address of President S. O. Goho, which sounded the keynote of the concentration of effort on a newer and broader basis under his leadership:

PRESIDENT'S ADDRESS.

The manufacturers of sand-lime products have every reason to congratulate themselves upon the prosperous condition of the industry in which they are engaged.

The product of our plants is better than ever before and there is a rapidly growing appreciation of the merits of the product on the part of the architects and builders.

Intrinsic merit and good business management have been important factors in bringing success, but neither of these could have availed in the face of an unfavorable rating upon sand-lime brick, and it was this association that made the fight against such unfavorable rating and won out.

When this association was called together for the first time for mutual advice and encouragement, there was no clearly expressed purpose of forming a permanent body. From this fact has arisen some weakness that should be corrected at this time.

The constitution and bylaws should be carefully gone over, with a view to revision, or possibly to the making of new ones, and your president suggests that a committee be appointed for this purpose, asking them to report at the business meeting tomorrow morning.

The only expenses which the association in the beginning expected were those incident to the conduct of the office of secretary and those arising from the publication of the annual report of proceedings, and financial provisions were made accordingly.

A little more than two years ago, unexpectedly, an unfavorable insurance rating was made upon sand-lime brick. Had that rating been permitted to stand, it would eventually have closed every sand-lime plant in this country, and had a most disastrous reaction upon the plants in the Dominion of Canada.

This association took up the matter with the National Board of Fire Underwriters. Meetings were had with their representatives, tests were suggested, and finally made in the laboratories of the Fire Underwriters by the Underwriters and your committee, with Drs. Woolson and Lazelle as advisory. The result of the tests was a vindication of our products. Considering the magnitude of the interests involved, the cost of this work was trifling. None the less, it was far beyond the resources of this association. Common honesty and good business sense dictated that these bills should be met as promptly as possible.

With the exception of bills owing members of this association for expenses in attending the meetings with the representatives of the Board of Fire Underwriters, and the salary due the secretary, we are out of debt. In the meantime we have not been able to publish our report of proceedings, and this may have cost us some memberships. Your president suggests that a committee be appointed to report tomorrow morning upon our finances, the outstanding bills, and at the same time upon the ways and means, if such there be, for publishing the proceedings of the meetings at Columbus, Washington and Buffalo. It should be proper for this committee to take up and report upon any phase of these questions that may seem advisable. Should the reports of these years be published separately or as a single volume? Should the reports be published verbatim or with repeated matter eliminated? When published should their circulation be limited to the membership of this body? If publication in full be impracticable at this time, are we in position to publish as bulletins articles of technical value? This question of how far we shall extend the benefits of this association to those outside leads me to speak of certain changes that your Executive Committee has seen fit to make at this meeting.

Registration consists as much in paying dues as in any other one feature. There has been trouble in the past because the association never knew what it had to use in keeping house. With the fees collected before debts are incurred we

know just what we dare spend to prevent a deficit. Those who are not members of this association, as shown by the books of the treasurer, are not to have the privileges of this floor. Those of you who are familiar with the trade associations in other lines know that their meetings are invariably in executive session.

This is not wholly nor even largely for financial reasons. It is right and proper that we should know exactly what we have to rely upon in our treasury. The only way to bring this about is to insist upon the payment of dues previous to admission to our meetings.

Beyond this, if you will look over the proceedings of the meetings held in other years, you will find that a great deal of the time of this association was taken up by persons who asked information of every sort, persons who took the floor repeatedly, but persons whose names do not figure on the books of the treasurer. An additional reason is to be found in the nature of our discussions. The perfect building material has not yet been found. At our sittings we have been very frank in talking about the difficulties we have met, weaknesses that have developed and how to remedy them, the cost of production and selling prices, and a variety of other things best discussed in executive session, that garbled and distorted versions of our statements may not be used to our disadvantage.

Our meetings are valuable, our time is valuable, the results of our experience are valuable, and those who want to share in the benefits of this body should be ready to step up and see the secretary and treasurer in an official way.

Your president suggests that a fifth member should be added to the Executive Committee, who shall represent our Canadian membership and do what he can to bring all of the sand-lime plants in the Dominion into affiliation with us.

Every suggestion of the president was worked out by committees and adopted into the future policy of the association before adjournment, and committees on standardization and publicity promotion were appointed to conduct these branches of the association's work for the coming year, in addition to the regular organization work of the executive committee, which, according to the constitution, is representative of the geographical sections of the membership of the association.

Some Interesting Papers.

A number of papers were read by members of the association best qualified to lead the discussion on the several topics of the concentration of association work and were as follows:

"What this Association has Accomplished for the Tangible Use of its Members," by John L. Jackson, Saginaw, Mich. This was a paper which was carefully prepared, and sketched in brief the labors and achievements of the organization in the past. In it Mr. Jackson called attention to the various improvements in the process of manufacture that the association has been instrumental in working out, the advantages to the builders of machinery, and last, but not least, the great improvement in the product of the plants which have been represented by men who attended the association, and the standardization of the product upon a basis which is more intelligent and makes it more valuable for the practical use of the architect and the builder than any other known building material now to be found in the markets.

"What the Association May Do for the Industry It Represents," by J. S. Palmer, Sebewaing, Mich. Mr. Palmer discussed in a statesman-like way the influence and powers and cumulative effect of cooperative effort in behalf of the men who are engaged in one line of human endeavor. Mr. Palmer is an experienced organization man and has been a member of the association from the time of its organization.

In other lines Mr. Palmer is recognized as a leader of thought and an enterprising association worker. His suggestions with regard to making the work of the association known to the building authorities of the country, as well as the powers that control the attitude towards all types of materials, was well received, and this suggestion later in the evening resulted in the appointment of the Publicity and Promotion Committee, of which Mr. Palmer became chairman.

"The Essentials of Success in the Manufacture of Sand Lime Brick," by W. H. Crume, of Dayton, O., was a paper devoted to the practical workings of the establishment and the organization of the economics which make it possible to manufacture the standard grade of sand lime brick with some profit to the establishment. Mr. Crume in two different plants has achieved enviable success by reason of his intelligent application of well-known mechanical economics and systematic organization, and his paper was listened to with a great deal of interest.

"One of the Successful Ways of Preparing Coarse Material," by W. E. Plummer, Jr., Buffalo, N. Y., was a description of the recent installation of a wet pan grinder which has given signal satisfaction. The practical men present made Mr. Plummer go over every one of his statements two or three times, until he ended the discussion by inviting all who might be interested to come out to his plant, which is located at Lancaster, one of the suburbs of Buffalo, to personally inspect the machine in operation, and this invitation was accepted by nearly every one present.

"The Future of This Association," by H. O. Duerr, Wilmington, Del., outlined an ideal policy for the work of the association. No one is better qualified

to know the requirements and no one is in better touch with the possibilities than Mr. Duerr, being one of the founders of the association and from the first in the front rank of the manufacturers of sand lime products.

Each and every one of these papers was discussed *ad libitum*, and nearly every member present got a good slice of information from this source. In fact, there were numerous expressions from the floor in the little speechlets that terminated the discussion to the effect that it had been worth a great deal of money to the members. There were perhaps a dozen of such expressions, which is the best evidence that the value of the leading papers and the discussions following the same were practically effective and useful to the men who participated in the floor work.

Reports of Officers.

The report of the secretary showed that the membership had been well sustained, that the only disturbing factor was the lack of published information of the workings of the association for the use of the membership, and that the members of the association were loyal and inclined to support the work in a liberal way.

The report of the treasurer showed a balance in the treasury after settling up the debts of the association for technical services and for comparative tests, etc., so that the association is practically out of debt or at least self sustaining.

Work of the Committees.

The committee on Constitution and By-laws consists of H. B. Skeele, Savannah, Ga.; E. P. Bacon, Bridgeton, N. J., and F. K. Irvine, Chicago, Ill. The report was presented by Mr. Skeele, and recommended the change of name of the association to the American Association of Manufacturers of Sand Lime



FIRST CHRISTIAN CHURCH, WINCHESTER, KY., FACED WITH WHITE GRANITE BRICK FURNISHED BY THE WINCHESTER GRANITE BRICK COMPANY.

Products, with the explanation that this was necessary in order to give the Canadian members actual recognition in the name of the body.

In line with the discussion of the president's suggestion the admission fee of the association was raised from \$10.00 to \$25.00 and the annual dues were raised from \$10.00 to \$15.00. These changes were explained in the first instance as being equitable to the faithful membership who have steadily contributed to the expensive technical research and to costly committee services, and in the matter of dues it was found that in view of the fact that the membership desired to have reports of conventions and meetings published together with bulletins and official circulars from time to time, that the additional dues would be necessary to cover the expenses. A provision was inserted to provide for the removal of such members who might refuse to co-operate with the work of the association, or use every reasonable endeavor to keep their product in line with the standard specifications which have been adopted by the association for the product when made by the members of the association. It was explained that these specifications were easily within the reach of any manufacturer who is determined to live up to the ideals of the association. This entire report was unanimously adopted and becomes incorporated as a part of the constitution of the association to more fully describe its policy in the future.

The committee on Ways and Means is composed of Messrs. W. K. Squier, Syracuse, N. Y.; John L. Jackson, Saginaw, Mich., and A. Berg, Toronto, Can. They provided for the payment of current bills, and also for the publication of abridged reports of the three conventions of the association which have up to this time remained unpublished, and for such other financial matters as the work of the association demands.

An auditing committee consisting of L. W. Penfield, Willoughby; O. W. Godart, Minneapolis, and John E. Ericson, Waltonville, Pa., adjusted the accounts of the secretary and treasurer and reported that they were correct.

Two standing committees were appointed. A committee on Promotion and Publicity, consisting of J. S. Palmer, Sebewaing, Mich., chairman; H. B. Skeele, Savannah, Ga.; F. K. Irvine, Chicago, Ill.; H. O. Duerr, Wilmington, Del., and John L. Jackson, Saginaw, Mich. This committee, with the cooperation of the members of the association, will furnish a column or more of association matter to ROCK PRODUCTS and other trade journals during the coming year. They will consider and review matters relating to the promotion of the interest in sand-lime products with architects and builders directly within the shipping limits of the plants now operated by members of the association and to the general public as well. This important committee is made up of workers and they will doubtless in the coming year produce many things of interest and profit to the makers of sand lime brick.

The committee on Standardization, consisting of district executives, is as follows: Messrs. E. M. Loewenthal, Rockaway, N. J.; H. B. Skeele, Savannah, Ga.; L. W. Penfield, Willoughby, O.; W. Godart, Minneapolis, Minn., and F. B. Allan, Toronto, Ont. The duty of this committee will be to examine the product and assist the various members of the association in securing and maintaining the standard specifications in the product that they turn out. With this committee every member of the association will be intimately connected for the reason that every member who is not now making standard brick will be expected to do so, or to use every possible endeavor to do so, by the time of the next annual convention.

The following officers were elected to conduct the work of the association for the coming year:

President—S. O. Goho, Harrisburg, Pa.
Vice-president—Wm. D. Schultz, Brantford, Ont.
Secretary—F. K. Irvine, Chicago, Ill.
Treasurer—W. E. Plummer, Jr., Buffalo, N. Y.
Executive Committee:
Eastern District—E. M. Loewenthal, Rockaway, N. J.
Southern District—H. B. Skeele, Savannah, Ga.
Central District—L. W. Penfield, Willoughby, Ohio.
Western District—Walter Godart, Minneapolis, Minn.
Canadian District—F. B. Allan, Toronto, Can.

The Banquet.

On the evening of December 6 a subscription banquet was held in the private dining room of the Statler hotel at which every delegate of the convention was present and it was a most enjoyable affair.

H. O. Duerr, of Wilmington, Del., acted as toastmaster and he was in his element in this eminent position. He had a jab and a thrust for every speaker, and the responses were invariably in the same pleasant vein in which he called for the impromptu numbers around the banquet board. His victims were S. O. Goho, W. K. Squier, W. E. Plummer, F. K. Irvine, J. E. Ericson, L. W. Penfield, John L. Jackson, and one or two others, for there seemed to be no limit either to the toastmaster's vocabulary or his wit.

There were plenty of good things to eat and it was a very enjoyable occasion, which many of the members insisted should hereafter be a feature of future conventions as it has the effect of developing the social side along very pleasant lines.

The Attendance.

S. O. Goho, Allen G. Walton, R. J. Walton, Jr., and John E. Ericson, Hummelstown, Brownstone Co., Waltonville, Pa.
J. S. Palmer, Sebewaing Sandstone Brick Co., Sebewaing, Mich.
Raleigh W. Holden, Rochester Composite Brick Co., Rochester, N. Y.
John L. Jackson, Saginaw Sandstone Brick Co., Saginaw, Mich.
W. H. Crume, Crume Brick Co., Dayton, O.
E. M. Loewenthal, Rockaway Brick Co., Rockaway, N. J.
E. P. Bacon, Penbryn Brick Co., Bridgeton, N. J.
Oscar Gross, Sioux Falls Pressed Brick Co., Sioux Falls, S. D.
F. E. Allen and J. O. Mercer, Toronto Indestructible Brick Co., Toronto, Ont., Can.
Walter Godart, Belt Line Brick Co., Minneapolis, Minn.
John Helmlech, LeRoy Lime Works, LeRoy, N. Y.
W. J. Carmichael and L. W. Penfield, American Clay Machinery Co., Willoughby, O.
W. K. Strong, Montana Granite Brick Co., Helena, Mont.
A. Berg, The Berg Machinery Manufacturing Co., Ltd., Toronto, Can.
R. F. Kremheder, W. E. Plummer and F. Harsenlopp, Buffalo Sandstone Brick Co., Buffalo, N. Y.
H. O. Duerr, Wawaseet Stone Co., Wilmington, Del.
W. K. Squier, The Paragon Plaster Co., Syracuse, N. Y.
H. B. Skeele, Savannah Brick Works, Savannah, Ga.
S. G. Marling, Silica Brick & Lime Co., Ltd., Victoria, B. C.
H. C. Shields, Lehigh Car Wheel & Axle Co., Catasauqua, Pa.
G. W. Mitman, C. K. Williams & Co., Easton, Pa.
W. D. Schultz, Schultz Bros., Brantford, Ont.
Louis Buchheit, Mitchell Lime Co., Mitchell, Ind.
Albert T. Leach and H. P. de Joannis, Brick, Chicago.
F. K. Irvine, ROCK PRODUCTS, Chicago.
E. M. Updike, reporter, Chicago.

Banner Year in Michigan.

Reports from Michigan make this year the banner one in the sand lime brick business. The following plants operating under the Komnick System have doubled their capacity: Sibley Brick Co. of Sibley, Michigan Pressed Brick Co. of Detroit, Sebewaing Sandstone Brick Co. of Sebewaing, Saginaw Sandstone Brick Co. of Saginaw, and the Grande Brick Co. of Grand Rapids. The last two mentioned are running day and night, turning out 44,000 brick per day on a single press. The fact that the Grande Brick Co. is a new plant this year speaks very well of its product and system of machinery.

Prosperity in Kentucky.

J. Harry Allan, secretary-treasurer of the Winchester Granite Brick Co., Winchester, Ky., says in a recent letter:

"I am glad to report that our factory is running on full time, making 19,000 brick every day, and we are shipping them out just as fast as we can make them. We have orders in hand that will keep us running well into January. We have a number of buildings to our credit that are our best talking arguments—and more of them are coming to completion. This year we erected a lime kiln at our works at Dudley of seventy-five barrels capacity, and we are now burning our own lime as well as some for the market. The kiln is within 100 feet of our brick factory and the limestone less than 200 feet (perpendicular) from the kiln. We are shipping sand and gravel for concrete work at a lively rate, and since we added an American pulverizer to our equip-



PLANT OF THE WINCHESTER GRANITE BRICK COMPANY, WINCHESTER, KY.

ment and provided bins with screening arrangements I believe we are making the highest grade of concrete aggregate material in the world. I am sending a few pictures of our jobs. We want to know how to make red sand-lime brick that are red."

Making Brick From Refuse.

BY FRITZ KLOCEK.

Translated from Tonindustrie-Zeitung.

Many towns in Great Britain have made it a practice to burn the rubbish gathered in the city, in especially constructed plants with forced draft.

In Nelson, England, a new feature has been developed, which utilizes even the refuse of the rubbish—the ashes. These are made into brick, by the well-known high pressure system used in the numerous sand-lime brick plants. The coarse ashes are ground in dry pans and then mixed with caustic lime. This mixture is properly moistened and pressed into brick, which are exposed to high pressure steam in order to cure them. The brick thus made have a crushing strength of from 4,000 to 5,000 pounds per square inch, and an absorption of only 6.8 per cent. The analysis of the crude ashes reads:

Silica	40.06
Lime	11.02
Clay	18.05
Oxide of Iron	22.08
Mangan	6.09
Magnesia	
Alkalies	

The Nelson plant makes 18,000 brick per week, at an actual cost of \$3.50 per thousand. In a larger town where more rubbish could be gathered and probably 100,000 or more brick per week manufactured, the enterprise certainly would show still better financial results.

THE MARYLAND PORTLAND CEMENT CO.

has been consolidated with several other properties under the corporate name and title of

SECURITY CEMENT & LIME CO.

Improvements and additional equipment to the consolidated plants will materially increase present output of **SECURITY Portland Cement**, and enable the new company to manufacture the highest grade lime in all its forms, fluxing stone, pulverized limestone and crushed limestone for all purposes.

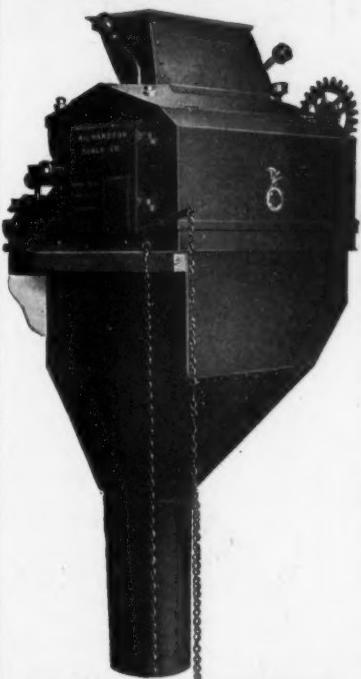
The main offices of the company remain

8th floor Equitable Bldg., BALTIMORE

**"OK" QUALITY**

"OK" Cement is ground 85% fine on the 200 mesh sieve—and contains 10% or 38 lbs. more actual cement than the coarser ground cements—OK Cement will carry one third more sand than other brands—it is the highest possible grade and guaranteed in every particular and to meet all requirements of the U. S. Army and American Society for Testing Materials.

Oklahoma Portland Cement Co.
Ada, Oklahoma

Automatic Cement Bagging

The Richardson Automatic Bagger weighs 5 to 6 bags of Cement per minute with a guaranteed accuracy of within one-half pound per bag.

**Simple,
Practically Dustless.**

No expense beyond initial outlay.

With this machine you don't give away cement in overweights, nor get complaints from contractors for short weights.

Average weight put in bag, exactly 95 lbs.

RICHARDSON SCALE CO.,
7-8 Park Row, NEW YORK,
122 Monroe St., CHICAGO.

Tell 'em you saw it in ROCK PRODUCTS

The Production of

**UNIVERSAL
PORTLAND CEMENT**

Year.	Output of Universal Portland Cement-bbls.	Percentage of total American output of Port- land Cement.
1900	32,000	0.38%
1901	164,000	1.29%
1902	319,000	1.85%
1903	463,000	2.08%
1904	473,000	1.78%
1905	1,735,000	4.92%
1906	2,076,000	4.55%
1907	2,129,000	4.36%
1908	4,535,000	8.89%
1909	*6,000,000	

*Estimated.

Additional capacity now under construction will give us an output of 8,000,000 barrels for 1910.

**UNIVERSAL
Portland Cement Company
CHICAGO - PITTSBURG**

Bates Waterproof Valve Bag

PATENTED



It is absolutely waterproof (the long sought and long desired quality). One of our competitors writes as follows:

"It would seem to us if there is a paper mill capable of making a waterproof paper paper that mill has a pretty busy concern just now. Besides the mill has a certain number of gauges, particularly on the bags, which would be lost in paper, leaving only those that can furnish waterproof paper if it can get it from a mill that can."

This bag costs no more than the most expensive bag made of absorbent paper. For further information apply us.

The West Jersey Bag Co.

Camden, N. J.

Your Bag Repairing Reduced 90%

Why bother sewing on patches, and then have stitches tear out, when by using

Little's Sac Paching Sement

You secure a permanent patch, better and more easily done.

It is applied with a brush. Time of mending and money saved.
Isn't that economy? Write for further particulars.

The C. H. Little Company, **DETROIT,
MICHIGAN**



MILL:
Kosmosdale,
Kentucky



Kosmos Portland Cement Co.

RELIABILITY

WAR DEPARTMENT
ENGINEER OFFICE, UNITED STATES ARMY.

Nashville, Tenn., February 20, 1909.
KOSMOS PORTLAND CEMENT COMPANY,

Louisville, Ky.

Dear Sirs:—Replying to yours of the 12th instant, I beg to advise you that our records show that 22,250 barrels of Kosmos cement were received at Hales Bar, Tennessee River, for the lock under construction at that point, between June 28 and September 25, 1908. All of this material was tested and all of it accepted under the requirements of the Engineer Department specifications.

Very respectfully,

WM. W. HARTS,
Major, Corps of Engineers

A Destructive Fire Prevented the Completion of the 100,000 Barrel Contract. The Rebuilt Mill is Fire-Proof.

It is universally recognized that no tests are more exacting than those of the War Department. A record of uniform acceptance, such as above, is the best assurance to the purchaser of the unvarying quality of KOSMOS cement. It is a FACT—more convincing than any amount of TALK.

ASK FOR QUOTATIONS

Kosmos Portland Cement Co.



SALES OFFICE:
Paul Jones Building,
Louisville



TWENTY LONG YEARS

of time and weather tried out Ricketson famous "Red Brick" Brand.

COLOR

for Mortar, Brick, Cement, Stone, etc., and proved it to be absolutely permanent. Red, Brown, Buff, Purple and Black.

Ricketson Mineral Paint Works
MILWAUKEE, WISCONSIN



MEACHAM & WRIGHT COMPANY
CEMENT
CHICAGO

CAPACITY
700,000
BARRELS
ANNUALLY

OFFICE
ALLENTOWN, PA.



STANDARD
SPECIFICA-
TIONS
GUARANTEED

**USE****Superior Portland Cement**

IN YOUR CONCRETE WORK and be assured of satisfactory results

Ask for a chemical analysis of Superior Cement, and we will show you something which will interest every cement user.

The Superior Portland Cement Co.

General Offices and Sales Department:
Union Trust Bldg., CINCINNATI, O.

WORKS:

SUPERIOR, Lawrence Co., Ohio
on D. T. & I., C. & O., and N. & W. Railways

Tell 'em you saw it in ROCK PRODUCTS

Red, Brown, Buff and Black**MORTAR
COLORS**

The Strongest and Most Economical in the Market.



Our Metallic Paints and Mortar Colors are unsurpassed in strength, fineness, and body, durability, covering power and permanency of color. Write for samples and quotations.

CHATTANOOGA PAINT CO.

Chattanooga, Tennessee

STORAGE CELLAR, MONROE, MICHIGAN



THE MAUMEE CHEMICAL CO., 403 St. Clair Bldg., Toledo, O.

MAUMEE
COMPOUND

Washed-Steam Dried and Screened**Ottawa White Sand**

Unexcelled for { Facing Concrete Blocks
Ornamental Concrete Stone
White Plaster
Roofing
Exterior Plastering
Sawing Stone and Marble, Etc.

Analysis 99.88

Prices, Freight Rates and Samples on Application

The Only Standard Sand**Ottawa Silica Co.**

Ottawa, Illinois

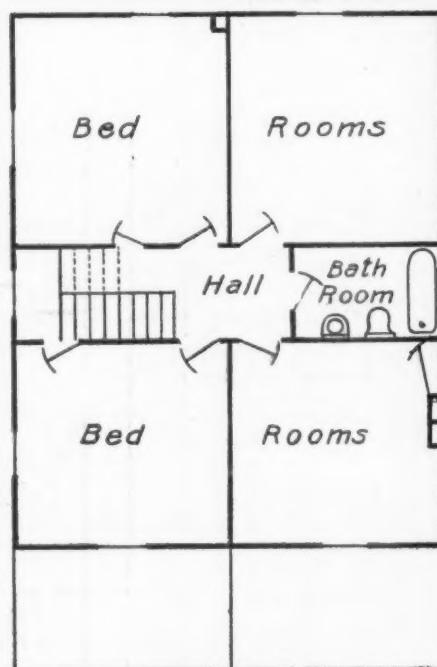
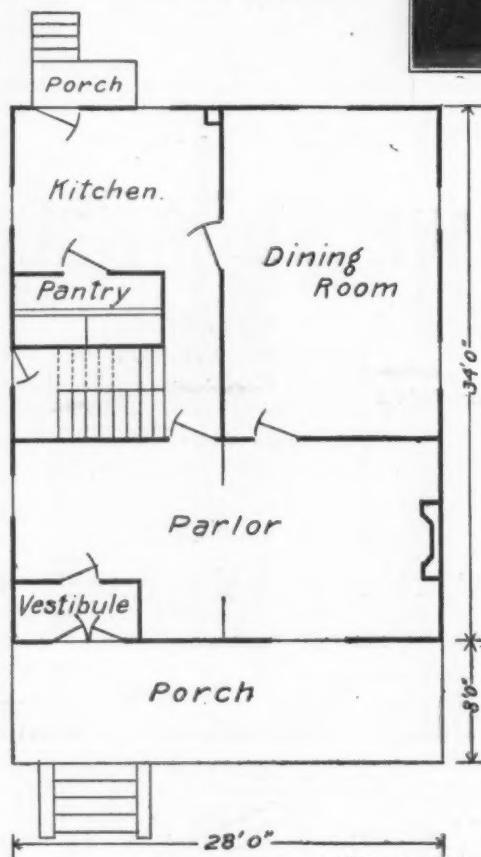
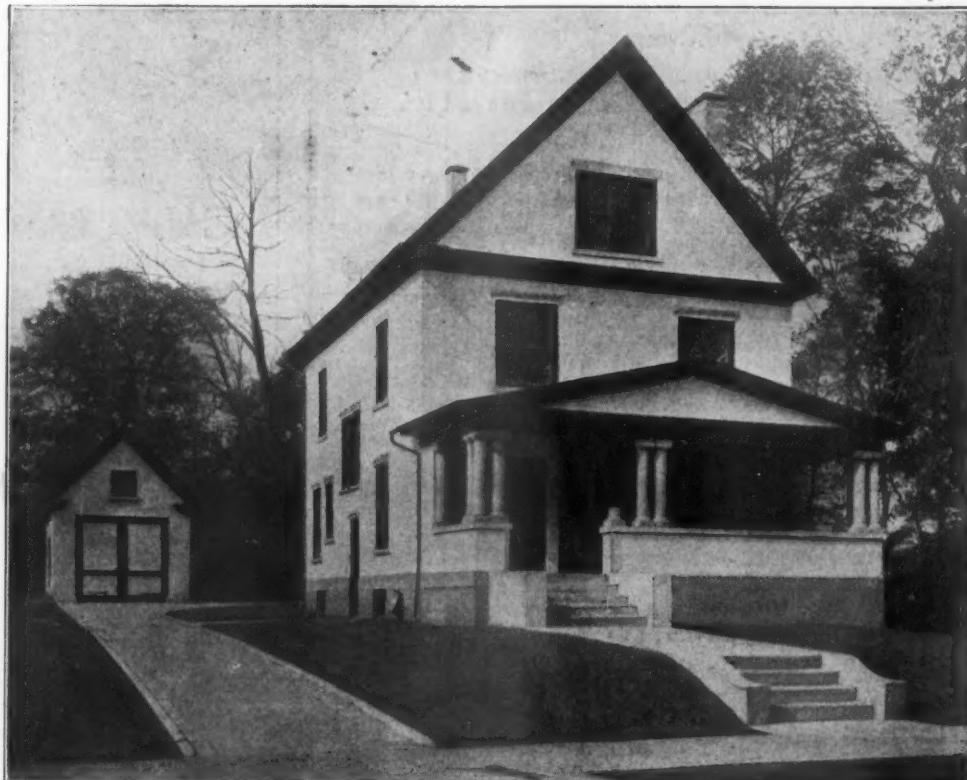
LARGEST SHIPPERS OF WHITE SAND IN THE UNITED STATES

Low Cost Concrete Homes

The greatest obstacles to the use of concrete in small residence construction are: 1. The expense of form work and contractor's plant in reinforced concrete (monolithic) construction, and 2. The unsatisfactory appearance and poor waterproof qualities of concrete blocks made by the dry-tamp process. Both these obstacles have been overcome by

The Pauly Concrete Hollow Tile.

Full particulars with regard to the equipment of a suitable factory with the necessary machinery for any location will be cheerfully given, and a conservative and profitable deal will be exhibited for prospective manufacturers of concrete structural tile upon request.



Frank M. Ray's
Residence
Youngstown, Ohio.

Send for booklet showing a large number of houses built with this material.

CONCRETE STONE & SAND CO., Youngstown, O.

Tell 'em you saw it in ROCK PRODUCTS

This residence is fireproof and waterproof. It was built in Youngstown, Ohio, fall of 1908, upon the following contract specifications:

Masonry work complete, including selling price of tile, concrete floor extending under entire basement and combination tile and reinforced concrete floors, \$	950.00
Excavation of cellar and construction of walks, steps, etc., outside of building proper.....	125.00
Lumber, hardwood lumber finish for interior and glass (including built-in furniture and plate glass mirrors),	1,000.00
Carpenter work.....	700.00
Slate roof and spouting.....	200.00
Plumbing in kitchen, bathroom and basement.....	250.00
Painting (exterior and interior)	125.00
Furnace and piping.....	150.00
Total plastering (including material).....	200.00
	\$3,700.00
Plus 10% profit.....	370.00
Total contract price.....	\$4,070.00

The walks, driveway and steps, as well as the porch columns, are of concrete. It is sumptuously finished inside with hardwood, plate glass windows and doors with slate roof and six massive pieces of built-in furniture of elegant design, with plate mirrors, etc., all included in the figure named.

There is a good business opportunity in building homes of this type in any city. We furnish the entire machinery outfit upon the basis of a lease.

CONCRETE ENGINEERING

NOVEL CAISSENS.

Major Judson's Plan, First Tried in Muskegon Lake, Is Pronounced a Big Success.

William V. Judson, major in the engineer corps, and now engineer commissioner of the District of Columbia, has won fame by his new adaptation of concrete to the most difficult engineering feats with which the army engineers are called upon to cope. His concrete caissons, so constructed as to be easily sunk in places where difficulty has been experienced heretofore in making any structure stay, have proven so successful as to attract the attention of engineer officers all over the country. The lighthouse board in Washington has been quick to see their usefulness, and has ordered in several instances that the Judson type of caisson construction be employed.

It was Major Judson who, when stationed at Milwaukee, solved the problem of sinking caissons in exposed places subjected to terrific wave action. He was then in charge of work on the lakes and had grown weary of constant repairing and rebuilding. The result was his adaptation of the caisson principle to the construction of breakwaters and small lights. He was enabled to get satisfactory results through the use of concrete. The heavy concrete caissons which he originated will not only exclude water, but they are so strong that a tremendous mass of rock and concrete can be filled in and around them, after they are in position. This great weight holds them firmly in place, and the great mass of stone riprap surrounding the caisson in its sunken position holds off the ice and saves the concrete structure itself from the grinding effect of the ice.

One great advantage of the Judson system is that it enables the engineers to make their structures in very large measure upon dry land. There the heavy caissons are built up of rich concrete, with the usual forms and with adequate reinforcement. After they have been completed it is not unusual for the engineers to test their tightness by pumping water into them. When the construction has been workmanlike, and the concrete has been sufficiently rich, the caissons hold water without difficulty. They are then launched into the water, very much as boats are launched, and are towed to the place where they are to form the principal part of a new structure. When they have been towed to precisely the right spot, water is siphoned into them and they are thus sunk to the bottom.

In this final position the caissons are filled with rocks or concrete and the superstructure is constructed upon this solid foundation. For the filling a very lean concrete mixture is used. In very difficult situations tons of rock are heaped around the caisson. On bad bottoms the engineers trust little to the mere weight of the caissons, driving many piles, upon the top of which the caisson is sunk, and to which it is firmly secured. The size of the caisson used is determined largely by the character of the structure to be made. In the construction of breakwaters, where the caissons have already figured to advantage, comparatively large units are employed.

An illustration of the difficulties with which this method of construction is designed to cope is afforded by the situation in Muskegon lake, Michigan. This lake affords a harbor for the city of Muskegon, and is entered from Lake Michigan through a narrow channel. But navigation in the lake is endangered by an extensive shoal, known as Bank Point. This shoal has been the bane of government engineers. The bottom is bad, storms rage against every structure placed there, and the ice has heretofore carried away everything in sight. The light was started about ten years ago as an acetylene buoy, but this was swept away in short order. Then a big tank was firmly fastened to heavy piling, but in less than two years this had gone the way of the acetylene buoy. For four years longer a buoy was tried, its foundation being renewed every year. Last year a storm swept this tank from its



THE JUDSON FLOATING CAISSON.

moorings, and shipping was left again to take its chances. At this point arrived Major Judson with his new structure.

On the shore not far away the engineers constructed a caisson 14' square with walls 10" thick. When this was completed it weighed approximately twenty tons, but when it was launched it floated like a duck. Meanwhile a pile driver had driven piles at the old location of Bank Point light, and a diver had cut most of them off at a considerable distance below water level. A few were left projecting higher than the others, in order that they might help to hold the caisson in place. Then the caisson was towed to the location of the light, and settled firmly upon the piles. Into it were sunk more than thirty tons of rock. For this particular structure another similar caisson was constructed, and placed on top of the first. The second was also filled with rock and leveled off with concrete. The light is mounted on a concrete block 2' square and 4' high, within which pipes are buried. These pipes connect the light with two tanks which furnish acetylene gas.

The structure is surrounded by 150 tons of riprap rock, which gives the entire light a weight of about 250 tons.

Engineers all over the country are just as well pleased as the sea captains. They have already seen the possibilities of this innovation, and, while already recommending the use of caissons in other localities, will keep their eye upon this light in Muskegon lake, as this situation affords an excellent test. Here nearly every sort of difficulty is found in a concentrated

manner, and if the new light will stand up here it may be expected to be permanent anywhere.

Another great thing in favor of this construction is that it is cheaper than the old way. Major Judson has figured this out as to breakwaters, and his figures are unquestioned. Possibly in such a case as that near Muskegon, where only a simple buoy was kept formerly, the initial expense will be slightly greater, but for this the immeasurably increased solidity of the structure will compensate ten or twentyfold. Furthermore the successful operation of this sort of light may make it possible to do away with quite a number of small lighthouses.

Exacting Test for Concrete Floors.

All floors in the Michael A. Donohue building, 429-431 Plymouth Court, Chicago, ten stories in height, are of reinforced concrete with Gray columns and lattice steel girders. The floors were designed by J. J. Flanders, the architect, to carry 150 pounds per square foot for the first floor and upper stories from the fifth to the tenth. The second, third and fourth floors are designed to carry 300 pounds per square foot, live loads. A test was made under the supervision of the city building inspector, Alex. McCue, consisting of 104,640 pounds of cement in bags distributed over an area of one slab, 14 feet by 18 feet 4 inches, showing a total deflection of 1/32 part of an inch with a live load of 400 pounds. This test was made 50 days after the concrete was poured. The gauges were set Friday morning at 11 o'clock and the loading was completed by 3 o'clock in the afternoon. The first reading was taken the next day, Saturday, at 11 a. m., showing a deflection of 1/32 part of an inch; the next reading taken Monday at 11 a. m. showed no further deflection. The third and last reading taken Tuesday forenoon at 11 o'clock showed the total deflection to still stand at 1/32 part of an inch. The city building inspector O. K.'d the readings as here stated.

The test of the girder was made on the second floor with the same load of 104,640 pounds, piled over the center of the girder, covering an area of 14 feet by 18 feet 4 inches, and there was a total deflection of 1/64 part of an inch after 50 hours with live load of 400 pounds.

The test for the floors designed to carry 150 pounds per square foot made on the first floor with 72,768 pounds of cement in bags covering an area of 14 feet by 18 feet 4 inches resulted in a deflection of 1/16 part of an inch after 50 hours. The building inspector made the statement to Jos. Haigh, the general contractor for this building, that these tests were among those that made the best showing in his experience. Twelve hundred barrels of Lehigh Portland cement were used in this building and furnished by the Meacham & Wright Co.



TESTING A FLOOR SPAN IN THE MICHAEL A. DONOHUE BUILDING, CHICAGO.

TEST OF FLOOR, DONOHUE BLDG.
LOAD 104,640 LBS.
SPAN 14' X 18' 4" INCHES
TOTAL DEFLECTION 1/32 PART OF AN INCH
LIVE LOAD 400 LBS. PER SQUARE FOOT
GENERAL CONTRACTOR
MEACHAM & WRIGHT CO.

MUNICIPAL GAS HOLDER OF CONCRETE.

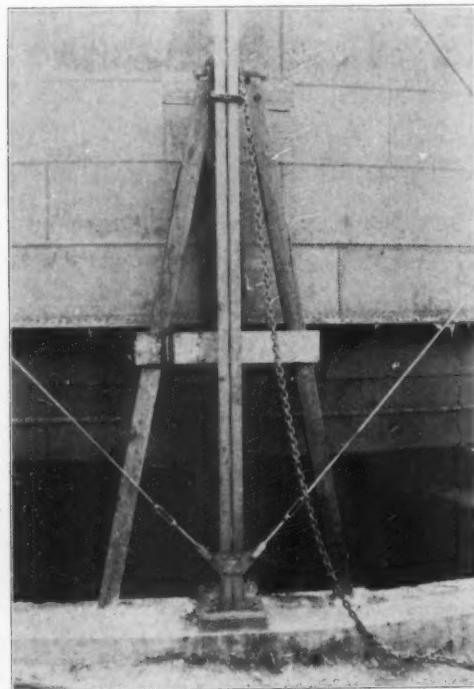
(Continued from page 3.)

Fifth—Raise both lifts and blow out present wall, replacing it with an entirely new wall.

In regard to the first proposition, this form of treatment is impractical from the fact that no matter how dense the mixture would be, a wall $\frac{1}{2}$ " thick would not be impervious to any great volume of water and would also have a tendency to crack and scale off from the old wall. Nos. 2 and 3 were thrown out on account of the space being limited between the wall and the flange on the steel cap. No. 4 was entirely too expensive, and the metal would eventually corrode and eat out. No. 5 being positively impossible because of the danger of demolishing the entire steel structure.

A report of the original work had previously been made by W. F. McKay, consulting engineer, Boston, Mass., based on the original specifications and from personal observations and inspection, a resume of which follows:

"The concrete to be composed of one part cement, three parts coarse sand and six parts of broken stone; and that the largest piece of crushed rock shall pass through a two-inch ring and that large stones may be placed in the concrete work. That the concrete wall be approximately two feet thick."



METHOD OF SUSPENDING STEEL HOLDER ON COLUMNS BY LARGE AUTOMATIC CHAIN BLOCKS, MUNICIPAL GAS PLANT, KINGSTON, ONT.

These specifications were adversely criticized by Messrs. Allen and Merrill in the following details:

A 1-3-6 mixture is not sufficiently rich to insure anything like a waterproof job; the proportions should be 1-2-4 and the crushed rock should be from $\frac{1}{4}$ " to $\frac{1}{2}$ ", carefully selected and free from all dirt or loam. No large stones should be used at all, as to secure a watertight wall it must be as dense as possible and free from voids.

In this particular job the wall was laid in and against the rock without the use of outside forms and the sand and thinner parts of the mass naturally would run into the cracks and crevices in the rough excavation and all large rocks would be left on the inner surface, causing voids where absolutely no voids or openings should be.

There are no provisions in the specifications for ramming the concrete, for limiting the depth of the layers nor for joining old and new and new concrete.

The following portion of this report is of general interest and points out the need of careful construction and skillful supervision. After stating that the concrete must not be laid in freezing weather nor if the thermometer is near 32° F., it says:

"It is to be further noted that no matter how good the material of the concrete, nor how rich the proposed mixture, the excellence of the finished concrete directly depends on the care with which it is mixed and placed, and on continuous, careful supervision. This fact cannot be too forcibly stated, and should never be omitted from any consideration of concrete construction. There is no form of building where constant personal attention is so absolutely necessary as in concrete work. One barrow of poor concrete or

one barrow of good concrete poorly laid in a wall may leave a poor section that thereafter cannot be made dense and tight. When concrete is once cast no external inspection of the moulded wall can disclose the location or extent of the imperfect work. The builder should be reliable, responsible and skilled, and the purchaser's inspection should be zealous and unremitting. These prerequisites are quite independent of, and auxiliary to, physical and chemical examinations of the components of the concrete. The general idea is that nearly anybody can make good concrete. The general fact is that the best concrete requires good judgment, good faith, incessant care and attention, and superior skill, as well as first-class materials."

The city authorities early in May, 1909, again called for tenders for the reconstruction and waterproofing of the gas holder, and the contract was given to Messrs. Merrill & Allen, engineers of Toronto and Belleville, Ont., respectively. The contract specified that the internal diameter of the tank should not be decreased and that the guaranteed maximum leakage should not exceed fifteen gallons of water in twenty-four hours.

"The first step consisted in lifting and supporting the steel cylinders of the gas holder sufficiently above the top of the concrete tank to permit of easy access to the interior of the tank. This was accomplished by the use of large capacity chain blocks suspended on the ten latticed steel columns surrounding the holder. The four to six inch concrete floor which had been originally placed on the tarred felt was next removed and the rock floor specially prepared to receive the new waterproof floor. A system of drainage underneath this floor was arranged to prevent any upward water pressure from injuring the new floor while the same was being placed.

"The vertical wall was then chipped back from three to six inches by means of pneumatic chisels and hand drills and the old concrete surface systematically roughened and cleaned, so as to secure the thorough adhesion of the new concrete. Special forms made on the principle of the stage or bridge used in theaters were made and the work of laying concrete was carried on continuously so far as possible, a complete ring being placed continuously. The wall is now composed of a 3" thoroughly waterproofed concrete, proportioned 1-2-4, with about 18 per cent of high calcium hydrated lime (see 'Modern Methods of Waterproofing Concrete,' by Lucius E. Allen, Ch. E., in ROCK PRODUCTS for March, 1909) added to the mess at the time of mixing. The materials used were Lehigh Portland Cement, clean and well graded lake sand, crushed limestone and "Crown" hydrated lime. Special precautions were taken to ensure thorough tamping of concrete, and the mixture was made sufficiently wet to flow freely.

"Within three months from the time work commenced the tank was again placed in commission, and frequent tests have since been made by the city engineering department, which show a maximum leakage of under ten gallons of water in 24 hours, which may be accounted for by evaporation or absorption.

The holder, having now been in constant use for about six months, is considered satisfactory from every standpoint, and the improvement is permanently completed."

Novel Fireproof Building in Brooklyn.

Concrete contractors and architects are deeply interested in the Thompson meter factory building recently erected in Brooklyn, N. Y. This is said to be a thoroughly fireproof structure, no wood or similar combustible material being employed, even the window sills, doors and similar work being of metal. Aside from this it is reported to be the first American building in which a designer has attempted to use rough concrete construction as architectural decoration. This building, which covers half a block, is entirely constructed of reinforced concrete, the rough columns being exposed on the exterior, and no finish having been applied on them, except a brush coat of white Portland cement. No care was taken to have special frames, ordinary wooden planks being used. Recesses were left for the brick panels and terra cotta. These recesses were afterwards filled with a special colored brick, and the cornice decoration, which is of colored terra cotta, all light tones, was set in place and fastened by means of brass hooks.

The whole exterior is bright and attractive, and is certainly a new note in factory architecture. The architect of the building was instructed by the owners to design a factory which would be an advertisement for their materials and that would have a maximum amount of daylight. All piers or walls were to be eliminated. The architect at the time felt that a new departure in reinforced concrete design was necessary in this country, and that here was a good opportunity to do something new. He believes that a concrete building should not be designed to look as though it was made of stone or brick, and that more efforts on the part of concrete

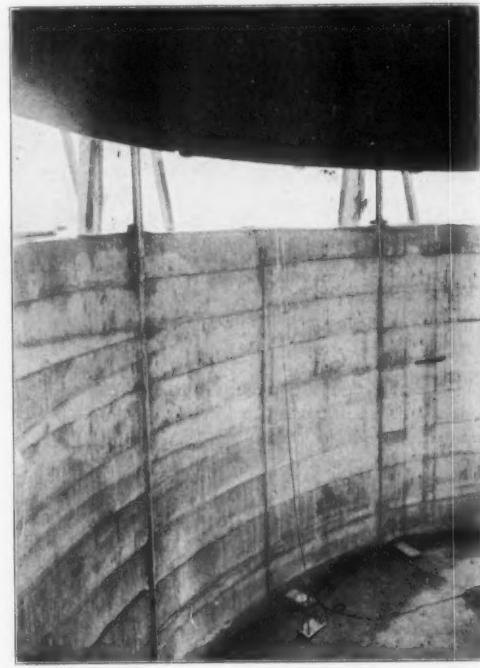
architects should be given towards the beautifying of their buildings without money loss to the owners. The decorations in this case have amounted to less than one per cent of the total cost of the building.

The architect of this building, Louis E. Jallade, was one of the first to introduce reinforced concrete in this country, and for several years was employed as consulting engineer for the New York branch of the Contancein Reinforced Concrete Co. The system used in the construction of the Thomson factory was the Hennebique.

Uncle Sam's First Concrete Dike.

ST. JOSEPH, Mo., Dec. 18.—The first concrete pile dike ever built in the United States in connection with river improvement work is to be constructed at St. Joseph as soon as the ice goes out of the Missouri river in the spring. The dike will be 500 feet long and it will cost \$14,000. If it proves to be successful, it is probable that few, if any, wooden piles will be used hereafter in the river improvement work of the government.

Maj. R. H. Schultz, engineer in charge of the Missouri river improvement work, placed twenty-five concrete piles at the shore end of one of the dikes



COMPLETED WALL LINING OF GAS HOLDER.

as a test of their usefulness for such work. These piles withstood the grind of the ice and scour of the current, and stood up better through the floods of last summer than the wooden piles alongside them. An inspection a short time ago showed them to be in perfect condition, and on this showing Maj. Schultz has decided to make a final trial in a regular dike, exposed to every test that such river works can be subjected to. He decided that the piece of work to be done opposite St. Joseph offered the best opportunity for this, so the test is to be made there.

Concrete Piles Supplant Wooden Ones.

SPRINGFIELD, O., Dec. 20.—Concrete piles are being used in the foundation work for the new Big Four passenger station in this city. These are piles, not pillars constructed in caissons. They are driven into the earth from 17 to 26 feet in exactly the same manner as wooden piles would be, and without boring a hole. There are 220 piles to be driven, which will require considerable time. After the piles are in place the American Concrete Co. will begin laying the foundation. P. M. Louwers and W. S. Hazleton, of Chicago, were here to see the work started. They are connected with the concrete company.

Concrete Plant at Summer Resort.

HAVERHILL, MASS., Dec. 20.—Salisbury Beach has a new industry, Albert Fowler having begun the manufacture of concrete blocks which will be used in the erection of many of the new cottages to be built at that resort. Mr. Fowler has one machine already in operation and is turning out bricks and blocks. He is erecting a building of cement blocks 30 by 40 feet in dimensions, one story in height, as a factory.

ROCK PRODUCTS

Nebraska Cement Users Convention.

Arrangements have been completed for the fifth annual convention of the Nebraska Cement Users Association, which is to be held at Lincoln, Neb., February 1-4 inclusive. Among the rules which will govern the exhibition which is to be given in connection with the convention are the following:

Applicants for space should make at least four selections, numbered in order of their choice. The association reserves the right to limit the number of sections to be assigned to each exhibitor. The association also reserves the right to decline or prohibit any exhibit which in the opinion of its president or board of directors is not suitable for the exhibition. This reservation applies to persons and their conduct, the exhibits, printed matter, souvenirs, catalogues and all things which affect the character of the exhibition.

The price of each section is shown on the accompanying diagram. Unless a check for 25 per cent of the space rental is received from the applicant within ten days from the date of mailing notice of assignment of space, the association will re-assign the space. The remainder of the amount of space rental must be paid on or before January 15, 1910. All space assigned after January 15, 1910, must be paid in full immediately upon receipt of notice of such assignment. All checks should be made payable to the Nebraska Cement Users Association.

without further cost, the full privileges at the next convention to be held at Chicago, February 21-25, 1910.

Benefits of Membership.—Great benefit is to be derived from membership in the association by the opportunity to acquire invaluable knowledge concerning the proper uses of cement through the exchange of practical ideas and experiences at the annual conventions. Members attending the conventions can take part in all discussions and will learn new facts gained by the experience of others in their line of work. If unable to attend the conventions, the annual proceedings will give the members a complete stenographic report of all discussions, as well as all the papers presented. In these volumes, containing the accumulated information of the last five conventions, will be found many suggestions and practical hints calculated to save the engineer, architect, contractor and manufacturer of cement products both time and money. The object of the association is to disseminate information concerning cement among its users and it is ready to do all it can to assist the members in meeting difficulties encountered in their daily work.

All publications of the association are sent to the members regularly as they appear, free of charge.

Each member will receive an association pin, which consists of an attractive button, containing the seal of the association in red, white and blue, set in gold.

Co-operation.—Every member should be sufficiently interested in the welfare of the association to bring the information to the attention of non-members. Without doubt you know many men interested in concrete construction who, upon personal appeal from you, would be glad to become members. The work of the association is of such direct benefit to everyone connected with the concrete and allied industries, that your efforts should receive hearty co-operation.

The various committees of the association are hard at work collecting data in their respective fields and appeal to the members to give them the benefit of their experience. It is only through the active support and co-operation of every user of cement that the industry advances, and it is hoped that every user will send in at once to the association headquarters, Harrison building, Philadelphia, any information in his possession, or his personal experience along the lines requested by the committees. If a user has any suggestion to increase the value of the outline of the proposed reports, send it in.

The Committee on Specifications for Cement Products desires to have its report cover the following items:

Data as to the success or failure of work done under our standard specifications for cement hollow building blocks, standard No. 3.

It is thought that it might be advisable to adopt a standard thickness of joints in laying blocks, so that the block makers will know just how to make their blocks to fit a certain size wall.

Data in reference to coloring cement products, giving information as to the proper materials and quantities to be used.

Standard specifications for cement brick, tile, and pipe; manufactured stone, and cement finish in buildings.

The Committee on Exterior Treatment of Concrete Surfaces proposes to incorporate in its report as much information as possible covering the following:

Effects of various materials and workmanship on surfaces, viz., cement, sand, stone, foreign matter, active or inert (glass, oil, glue), water, pigments, effect of molds, method of mixing and placing, treatment while hardening.

Removal of surface in various ways.—by unskilled labor, picking, scraping, rubbing; skilled labor, crandall, bushhammer, tooth tool, chisel, set, laths; sand blast (size of nozzle); chemical treatment (kind, strength, method); age of cement when cut or treated; tools, kind, quality, temper; effect of cutting on durability; effect of cutting on impermeability; effect of cutting on cohesion or dirt; advantages and disadvantages of certain treatments.

Coating surfaces in various ways.—Texture and condition of masonry surface to be covered (masonry includes brick, terra-cotta, stone, concrete, mortar, plaster); metal lath, kinds, method of erection; preparation of base to obtain bond; material, cement, sand, lime, pigments; mixing; placing, number of coats and treatment of each; workmanship, texture; joints; washes, cement, etc.; paint; enamel; durability; photographs.

Ornamental work.—Possibilities and limitations of surface; cast concrete; cast mortar; plastered mortar; kinds of molds; wood, plaster, iron, glue, sand (plain or treated), clay.

Waterproofing.—Necessity; mixed in concrete, hydrated lime, Medusa, clay, aquabear calcium chloride, etc.; method of incorporation; surface treatment, colorless, Te-Pe-Co, Cabot's, Toch Bros., Dexter Bros., Edison, Gildden Varnish Co., Paraffine, hot and cold; surface treatment, changing color, boiled oil and gasoline, tar and benzol, asphalt, pitch, varce, antihydriane; durability of each material; preparation and condition of surface to receive each of above treatments; mortar.

Limitations, effect of blemishes of various sorts, and remedies.—Range of colors; variation of color due to workmanship and weather; carbor crackers, checking; expansion and contraction cracks; irregular size (bulging of molds); mortar and stone at horizontal joint between day's work in concrete wall; patches darker color; emerescence, cause and remedy; porosity, cause and remedy; frozen surfaces; softness of surface; dusting.

Costs.—Exact and relative cost of each method and manner of estimating costs of materials and labor.

The Crum-Caldwell Co., Lackawanna, N. Y., has been incorporated to manufacture machines for making concrete blocks and brick, by Frank D. Caldwell, Lackawanna; Charles W. Getman, Buffalo, and John L. Crumlish, Hamburg, N. Y. The capital stock is \$6,000.

The Imperial Cement Products & Artificial Stone Manufacturing & Construction Co., Chicago, Ill., by Walter C. Murphy, Samuel Larson, Marie K. Murphy, all of Chicago. Capital stock, \$50,000.

CEMENT SHOW.

Committee Makes Award of Prizes for Center-piece Design—Reduced Rates on Railroads.

Awards of prizes have been made in the competition for a design for an ornamental centerpiece to be erected at the third annual Cement Show, which will be held in the Coliseum, Chicago, February 18-24. The winners are:

First prize, \$200, to Wilbur Karl Howenstein, Chicago.

Second prize, \$100, to Ernest V. Price, Spokane, Wash.

Third prize, \$50, to George Aswumb, Chicago.

The design chosen for first prize represents a monument to the cement industry of large proportions. It includes a gigantic pedestal, ornamented with figures in relief, supporting a shaft some thirty-five feet high, the whole surmounted by a figure of heroic size, typifying the strength and durability of concrete. The four sides of the base are decorated with plaques, the upper part being a briquette shield, and the lower portion a design representing the four ages—stone, bronze, iron and cement. The design, properly erected, will make an imposing centerpiece for the show.

Second prize was awarded to a design for a very attractive fountain. An eight-sided base contains a pool, in the center of which is a large monument, surmounted by a bracket and ball. The total height is about twenty-five feet. The third prize design is a combination monument and fountain, with a round base. Four handsome figures set in niches near the top make it exceedingly attractive. The top of the monument is finished in a dome, and the whole is polychromatically colored and brilliantly illuminated.

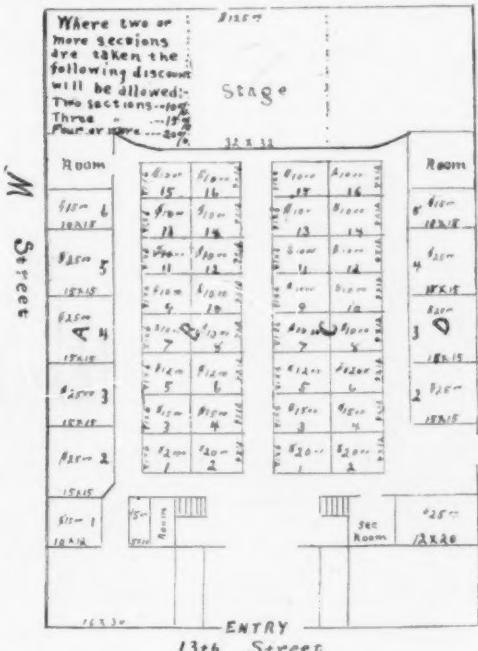
Architects, sculptors and designers of wide reputation participated in the competition, and the committee had no easy task making a selection, as the many designs submitted were all of merit. This committee consisted of:

Thomas E. Talmadge, representing Chicago Architectural Club.

Hugh M. G. Garden, of Schmidt, Garden & Martin. Murdoch Campbell, Building Commissioner of Chicago.

The two latter gentlemen were selected by the Cement Products Exhibition Co.

The Central Passenger Association, which embraces the lines operating principally in the territory between Chicago and Peoria, Illinois, to Pittsburg, has offered a reduced rate of a fare and a half. Tickets to Chicago, from points in this territory, may be purchased on any day from February 18-25, inclusive. Under this arrangement every one who purchases one of these reduced rate tickets, with certificate, will be positively guaranteed a half fare rate on the return trip from Chicago. In the past there has always been some trouble in making the reduced rate operative, on account of the fact that one thousand certificates had to be turned in before any could be validated at Chicago. This year this will not be necessary and certificates for the return trip from Chicago will be validated as promptly as turned in. Complete details about the reduced rates will be published later.



Work of National Association.

Edw. E. Krauss, assistant to President Richard L. Humphrey, of the National Association of Cement Users, is keeping up the campaign for the good of the association. One of his recent publications is as follows:

An energetic campaign for the increase of membership in the association is underway and will be pushed to the utmost. The interest of all those connected with the cement and allied industries is materially promoted by this association and every cement user should be affiliated with it—for in union there is strength.

Inducements for New Members.—In order to give an impetus to the enrollment of new members, the executive committee has decided that applicants for membership shall, on payment of their dues for the year 1910, receive a free copy of Volume V, with nearly 700 pages of printed matter and over 160 illustrations, some of which are in color, containing the proceedings of the Cleveland convention, provided such application for membership and payment of dues are made during the months of December and January. We urge you, in soliciting memberships, to emphasize this important fact, calling special attention to the immense amount of valuable data contained in this volume, which is among the most important publications relating to cement and concrete issued during the past year. New members will have,

CONCRETE HOUSES.

Two Fine Structures Erected at Allentown, Pa., Under the Edison "Poured" System.

ALLENBOWN, PA., Dec. 17.—Two monolithic concrete houses, the first to be constructed on the plan outlined by Thomas A. Edison, have just been completed, and are attracting a great deal of attention. These houses, which stand at 306 and 308 South Franklin street, were erected by T. A. Judson, formerly cement inspector for the rapid transit commission of New York.

These houses are really in the form of a double house, each side being of 16 feet frontage and 50 feet deep, having in addition an 8-foot front porch and 6-foot rear porch. The height is 35 feet from the surface of the cellar floors to the roof. The style of architecture is somewhat on the Greek order, taking the shape of a castellated structure with bay windows and little balconies. The foundation work and superstructure are entirely of concrete, as are the floors, the columns, the steps, the porches, the balconies and even the roof. For the door jambs, pieces of scantling were included in the concrete partitions, but the ordinary wooden baseboards are omitted.

The cellars have concreted floors and hot air flues run from the furnace into each one of the ten rooms. Through the kitchen runs a laundry shaft which can also be used from above. Into the outside kitchen wall is built a cement refrigerator, into which the ice man puts the ice from the outside, but whose contents, in the way of provisions, can only be handled from the inside. Quite as odd as the concrete refrigerator are the concrete chimneys. All floors, stairways, coal bins, and even the outside steps are of concrete. The only wood used is in the doors and jambs.

It is the opinion of all cement experts who have visited these houses that they are warmer in winter and cooler in summer than houses of other construction. The first floors have four rooms, while the second floors contain three bedrooms and a bath, and there are lavatories upstairs and downstairs. On the third floors there are two rooms.

One great feature in these houses is the beautiful lighting quality. Windows are numerous and in addition to them the color of the houses themselves on the outside, and of the walls on the inside, is such that the best possible results in the way of lighting are obtained.

In the erection of these houses, Mr. Judson acted as his own architect and superintendent of construction. His entire force of workmen numbered five, all the work being done by them. The concrete, made of one part Penn-Allen Portland cement, three parts of sand, and four parts of slag, was poured into wooden forms built up 18 inches high, with an overlap of four inches each time they were moved. Removal was made every day whenever the weather was favorable. The outer walls are 13" thick, collapsible forms of sheet iron being used to form air cells, which were "staggered." The wall reinforcement is one-half inch round steel rods, the American Steel & Wire Co.'s iron mesh being used in the floors to the extent of 5,000 feet for the two buildings. The partition walls between the two houses are 8" thick, and those dividing the various rooms 4".

On the outside walls there is a facing 2" thick, composed of one part of Penn-Allen Portland cement and four parts of sand. The color is of an attractive kind, containing more of a tinge of buff than most other concrete construction in this community. For durability to the weather as well as resistance to fire, it is believed these houses are the most substantial ever erected in this city. In the entire work only 600 barrels of cement were used, and the cost of both houses complete, including wiring, plumbing and heating, was \$7,825.

Manager W. E. Erdell and Sales Manager S. G. K. Stradley of the Penn-Allen Co. are naturally proud of the record made in the erection of these houses, not only as regards their beauty and utility, but also the remarkable record made for economy in the cost of construction. The women who have seen them are delighted with their cleanliness and ease of maintenance, they being dust, moth and vermin proof.

Has Good Business Principles.

LAGRANGE, ORE., Dec. 16.—J. L. Mars, manufacturer of concrete blocks and dealer in supplies, is an experienced mechanic and practical dealer. He operates in his concrete plant a batch concrete mixer, three block machines, column, cornice and ornamental molds, and sewer pipe molds from 5" to 30". In this plant he expects to install a power equipment outfit.

He also has a rock crusher with elevator and revolving screens operated by a 20 h. p. motor. He has a storage rock bin of 100 cubic yards capacity and also operates a street roller.

In the conduct of his business Mr. Mars has always insisted that his employees give the best work possible, and, at the same time, he makes the prices reasonable. He believes that it is better to give good work, charge a fair profit and hold a satisfied customer.

Regarding his way of conducting business, Mr. Mars says that he regrets one thing and that is that in May of this year he sent an order to a concrete mixer manufacturer with his check for \$100, ordering one of the machines, but up to this time no mixer has been received nor has his check been returned. It is to be regretted that the concrete industry has such unscrupulous men in it that they would accept an order with a check without even acknowledging it or filling the order; at least they should return the money. Mr. Mars is therefore in the market for another mixer.

Concrete City in Oklahoma.

Plans for the development of a new city, which will be known as Putnam City, Oklahoma, a suburb of Oklahoma City, are being prepared. A progressive step taken by the people in the movement is to make this a model suburban residence city, and in its building concrete will play a very important part. The contract for the development is in the hands of E. C. D'Yarmett, engineer and contractor at Oklahoma City.

The development will include grading and paving the streets and sidewalks, installing electric light system, sewerage and water works system, and the construction of a block of business buildings, which will be two stories high. The building will contain all modern improvements to be found in any city. The exterior of the building is to be of concrete brick.

This row will face on the main street of Putnam City 200', and will extend 150' along on each of the bordering streets. The substructure will consist of steel and the first floor curtain walls will be of concrete brick manufactured by the Oklahoma Cement Brick and Product Co., of Oklahoma City. Stores will occupy the first floor, while the second floor will be fitted for offices and hotel purposes.

It is gratifying to see the mark of progress being made in this new city. The promoters are men who intend to make Putnam City a model. It is to be of a substantial nature, as indicated by the kind of material to be used in the first buildings to be erected. The work of the future will follow along the lines of these, and everything pertaining to its expansion and growth is in the hands of capable men.

One Million Dollar Incorporation.

DETROIT, MICH., Dec. 20.—Detroit men are largely interested in the new one million dollar corporation, the Standard Cement & Lime Co., which was incorporated last week. It is to erect a big plant near Charlevoix, and produce National cement. Fred A. Aldrich, assistant prosecuting attorney, is president; E. L. Buell, secretary and treasurer, and Henry M. Hunt, vice president. The main business office will be in the Ford building, Detroit, and the operating office at Charlevoix.

Big Cement Plant for Rockland

ROCKLAND, ME., Dec. 18.—In another year the New England Portland Cement Co. will have a cement manufacturing plant under construction in the city of Rockland and probably in operation before the end of the year 1910. The bulk of the properties which it was necessary to acquire have been secured.

Here's a Wonderful Machine.

A new machine which has just been invented is said to produce 40,000 concrete blocks every twenty-four hours. Cement, gravel and sand are shoveled into the machine separately, and the machine does the rest, dropping the blocks out at one end all finished and ready for the dry sheds. At one point in the making the blocks are put under enormous pressure, which makes them as solid as rock. Strange as it may seem the inventor neglects to claim that his machine lays the blocks in place, but this is probably an oversight.

Will Make Concrete Bricks.

BINGHAMTON, N. Y., Dec. 18.—Ground has been broken on the Mattoon property on Madison avenue for a plant for the manufacture of concrete bricks by Harvey & Son. A large order has already been placed with the firm for the Elmira Machine works now being erected in Union.

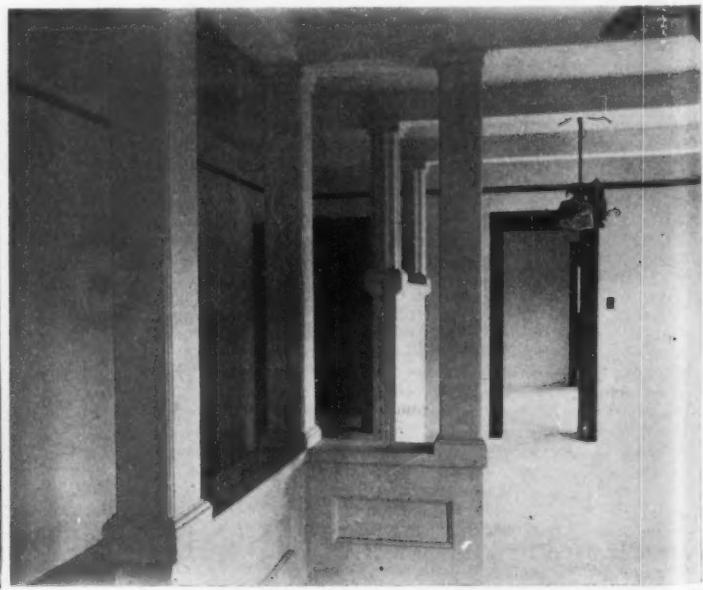
Fire Destroys Girard, (Ala.) Plant.

GIRARD, ALA., Dec. 17.—The plant of the Girard Concrete Co. was mysteriously burned November 30 shortly after midnight. The loss will amount to several thousand dollars.



EXTERIOR VIEW.

RESIDENCE OF T. A. JUDSON, ALLENBOWN, PA., BUILT ON THE EDISON PLAN.



SHOWING INTERIOR CONSTRUCTION.

DECEMBER 22, 1909.

ROCK PRODUCTS

Annual Meeting Iowa Association.

Arrangements are progressing satisfactorily for the sixth annual meeting of the Iowa Association of Cement Users which will be held at Cedar Rapids, March 9, 10 and 11, 1910. Cement users in and about Cedar Rapids are a bunch of boosters and nothing will be left undone that will contribute to the success of the convention.

The selection of Cedar Rapids is especially fortunate. The Montrose hotel, the headquarters, is one of the finest in the state. The Auditorium is likewise the most suitable place for the show that the association has ever had. Cedar Rapids is a railroad center and easy of access from all directions. It is on the main line of the C. & N. W. and of the C. R. I. & P. railways, and is reached also by the C. M. & St. P., the Illinois Central and the Cedar Rapids and Iowa City Interurban railway.

Requests for exhibition space are already coming in. All power machinery will be placed on the lower floor. Applications for space should be made by number from the plans, and the nature of the proposed exhibit should be carefully stated, so that there may be no question as to a proper and satisfactory assignment. Space will be reserved in the order of the receipt of application, which should be sent to the secretary, Ira A. Williams, Ames, Iowa.

Another Plant at Utica, N. Y.

UTICA, N. Y., Dec. 20.—The Cement Products Co., of Utica, organized by Alfred O. Crozier with the assistance of the Utica Chamber of Commerce, is erecting a 4-story building in Broad street, near the foot of Gilbert. There is a frontage of 340 feet in Broad street. The building is being constructed of concrete blocks of the kind to be made by the new concern, Mr. Crozier having invented a new machine for making concrete articles by a wet process.

Erecting Concrete Block Factory.

ENDICOTT, N. Y., Dec. 18.—Ground has been broken on the Mattoon property on Madison avenue for a plant for the manufacture of concrete bricks by Harvey & Son. A large order has been placed with the firm for concrete bricks for the Elmira Machine Works being erected at Union.

Will Manufacture Concrete Blocks.

ARLINGTON, Md., Oct. 20.—The Garrison Concrete Stone & Lumber Co., has been organized with \$10,000 capital stock; Mortimer W. West, president, 223 St. Paul street; Thos. J. Flannery, vice-president, Oak and Hamilton avenues; G. H. Haynes, secretary and treasurer, Belle and Garrison avenues. The company will establish a plant for manufacturing concrete blocks, brick, ornamental posts, etc.

Concrete Elevators.

Rapid progress is being made in the improvement of grain elevator construction. Whenever an old style terminal is burned down it is almost invariably replaced by a concrete or steel construction building, frequently sprinklered, says the *New York Journal of Commerce*. The general tendency is toward a marked reduction of the fire hazard and a consequent lowering of rates.

This is shown at Duluth, where the house of the Consolidated Elevator Company burned last year. In rebuilding the basement and first floor were made of concrete, upon which were erected tile tanks, with the usual weighing floors above. The floors were made of concrete slabs and the fire protection was carried to such an extreme that the cleaning machines were taken apart and each section covered with tin and put together again. In consequence these machines are like a fire door, with the wooden interior covered with tin.

Inspectors who have gone over the risk say that the only thing inflammable in it is the rope drive. Adjoining thirty-two reinforced concrete tanks for grain have been constructed, with a roof house over the tanks.

In Superior, 16 feet from the Great Northern Steel Elevator S, seventy-two concrete tanks have been constructed with a capacity of 2,000,000 bushels. These are being rushed to completion, so as to be ready to receive grain early in September.

The District Concrete Company, Wilmington, Del., has been incorporated by P. D. Fahrney, H. P. Fahrney, Frederick City, Md.; G. W. Yourtree, Burkettsville, Md.; and S. N. Widdup, Washington, D. C. Capital stock, \$100,000.

The Anamosa Concrete Block and Tile Company, Fargo, N. D., has been incorporated by W. D. Frankhauser, C. F. Frankhauser, William Konietzka and others of Anamosa, N. D. Capital stock, \$25,000.

Will Build Concrete Factories.

Plans for two large factories to be erected in Jersey City, N. J., have been filed with Superintendent of Buildings John Saul. P. Derby & Son, a New York furniture manufacturing concern, will put up a \$94,000 building at Communipaw Avenue and the Morris Canal. The structure will be reinforced concrete and will be six stories high, 200' long and 73' wide.

The Holdbrook Manufacturing Company, a concern that makes soap, has contracted for the erection of a seven-story structure at Coles and Eighteenth Streets. The building, which will be 100' wide by 200' long, is to be built of reinforced concrete. The cost will be about \$80,000. This company at present occupies a small building on Washington Street. Ground for both of these structures will be broken shortly.

Block Machines For Foreign Customers.

The Cement Machinery Co., Jackson, Mich., recently shipped three block machines to Milan, Italy, and one to San Juan, Porto Rico; also a concrete mixer to New Zealand. This company is building up a very satisfactory foreign trade.

Concrete Brick in Oklahoma.

Permanency, as well as artistic effect, is now the aim of building operators in Oklahoma City. This is probably the reason why the Oklahoma Cement Brick and Product Co. has had such remarkable success with its concrete brick. It has furnished brick for a number of structures—houses and apartments, and ever since it commenced manufacturing has had a ready sale for the entire output.



AN OKLAHOMA CITY APARTMENT BUILDING OF CEMENT BRICK.

One building which shows to good advantage this brick is a high-class apartment house recently completed. It is a 3-story building in which 60,000 face brick were used. F. J. Hawk was the builder and contractor. The brick in this building were made on a McIntosh automatic press and each and every one has a perfect shape, sharp edge and distinctive color.

Objects of Municipal Contractors' Association.

In a recent letter sent out to the trade by the secretary of the Illinois Association of Municipal Contractors, 805 Atwood Bldg., Chicago, the objects of this association are set forth as follows:

To improve, encourage and facilitate the making of public improvements.

To secure a higher degree of accuracy in the legally prescribed procedure and proceedings.

To collectively bear the expense incident to the making of abstracts of legal proceedings and examination thereof.

To stimulate the market and the demand for approved improvement bonds and protect the contractors against unwarranted exactions and unreasonable discounts.

To secure better specifications for public improvements, a greater uniformity in the specifications, and where practicable a classification of the various branches of public work.

To improve the quality, quantity and efficiency of public improvements.

To eliminate from specifications for public work conditions which are onerous to the contractor and wasteful to the public.

To secure at the hands of public officers equitable treatment and better and more just consideration.

To cultivate a closer tie of fraternalism among contractors.

To improve and relieve conditions and relations in which we have a common interest.

To initiate, promote and encourage the enactment of legislation tending to carry out the objects of this association.

Glass-Lined Cement Tanks.

Consul Alfred K. Moe draws attention, in the following report from Bordeaux, to the French utilization of the improved cement tanks lined with glass.

Several years ago cement tanks began to take the place of wooden tanks in a number of the larger wine storage houses. One of the reasons for this substitution appears to have been the cheaper cost of material for cement tanks, as the price for timber had been gradually rising, and even at the higher prices was scarce and difficult to secure. Although constant improvement was being effected in the construction and utilization of cement or concrete tanks, the great objection to their use still remained, i. e., that in the storage of wines the acids in the liquid very often decomposed the cement, while the cement walls, in turn, absorbed the freshness and "bouquet" of the wine. The wooden tanks were more expensive, but their value was greater, as they preserved the wine in a proper condition.

The effort to place acid-proof linings or coatings on the walls of cement tanks seems to have proved of slight value in the matter of ameliorating the conditions of absorption. The idea of coating the walls with squares of glass, tightly joined with cement, is said to have solved the difficulty, as a tartar forms on the thin surface of cement and resists all acid attacks.

As constructed in France, glass-lined cement tanks may be used for all kinds of liquids except those containing a large percentage of acids, the latter leading to the decomposition of the cement joints and the loosening of the glass plates. These tanks are particularly useful as storage receptacles for wines, alcohols, brandies, liquors, ciders, oils, gasoline, kerosene, turpentine, etc. It is said that tanks so constructed are neither affected by humidity nor by infiltrations, that they resist fire and inundation, and have a further advantage in that they are not liable to be struck by lightning as are tanks of metallic material. Variations of temperature effect a minimum loss by evaporation, the degree being reported at less than 1 per cent. At equivalent temperature wooden tanks lose between 6 and 7 per cent.

These tanks are made in all sizes, ranging from 20 to 2,500 hectoliters (528 to 66,042 gallons) or more in capacity. The walls of the larger tank constructions are generally reinforced with iron armature. An installation at Havre consists of eighty-three glass-lined tanks, having a capacity of 11,000 hectoliters (29,587 gallons). At Meurthe et Moselle the plant is two stories and comprises six vats or tanks with a capacity of 1,000 hectoliters (26,417 gallons). Another installation at Seine et Marne is three stories, the third floor being used for the filtration of wine under natural pressure. They also have a capacity of 1,000 hectoliters. The plant at Chalons sur Marne has a capacity of 2,750 hectoliters (72,647 gallons). All of these plants are used for the storage of wines.

These glass-lined tanks, constructed of concrete, are brought to the attention of the wine growers of California especially, and to American producers of cottonseed and other oils, as being valuable for storage purposes under the trying conditions of the climate, their cheapness of construction, their economy of space, and their cleanliness.

Barges of Concrete.

Large boats of reinforced concrete have been built in Italy, and five vessels of 120 or more tons have been constructed for the Italian navy. The first of these, a 120-ton barge, was built in 1906. This vessel, which was built with a double bottom and of the cellular type, was recently submitted to severe tests at the naval arsenal at Spezia, where a much larger boat, of iron, equipped with a ram, was directed against it without producing any considerable damage. In consequence of the satisfactory results obtained in the experiments with the boat, four more of these barges were ordered on account of the Italian navy. The problem of reinforced concrete ships has been meeting with a good deal of attention, and experiments and trials on a much larger scale will now be conducted in this kind of construction. Under one system the metallic frame or skeleton of reinforcing iron is arranged in accordance with the actual distribution of stresses; this framework is covered with expanded metal, which supplements the protective action by the distribution of armoring over a large area while uniting the various portions of the mass in such a manner as to preclude any risk of fracture. This process dispenses with the necessity for costly molds and renders it permissible to employ extremely thin walls.

The Cunard-Lang Concrete Company, Columbus, O., has been incorporated by Edward C. Turner, George Lang, Sr., George Lang, Jr., Millard F. Cunard and Mrs. Clara Lang. Capital stock, \$5,000.

FROM OUR OWN CORRESPONDENTS

CLEVELAND.

CLEVELAND, O., Dec. 17.—The year 1909 promises to outdo all previous records for building in this city. Reports for the first eleven months of the year indicate a substantial increase over last year. They will almost equal 1907, which was distinguished by the issuing of a \$3,000,000 permit for a courthouse. This year building has been of a more general character. For the first eleven months permits aggregating \$12,300,000 were taken out, as compared with \$8,991,004 for a similar period last year. It is believed that the total for the twelve months of this year will reach a full \$13,000,000.

The Rockefeller building, a 16-story office building at Superior avenue and W. 6th street, is to have a big addition. It will cost nearly \$1,000,000 and will be in general conformity with the present building, which is of steel, heavily reinforced with concrete and brick walls.

Another important announcement of a large building was made by the May Co., which will erect a 10-story structure on Ontario street as an annex to its present 6-story building, which is to be raised to conform with the new section to be built. The latter will have a frontage of 45 feet and will extend back 130 feet to an alley. It will be of steel, with concrete floors and brick walls. General contracts are to be let about January 1. It will replace a 5-story building, which has been burned twice in the past two years. The new building will be fireproof throughout.

The White Sewing Machine Co., located in its old building on Canal road for the past thirty years, has let a contract to the Reaugh Construction Co. for a new sawtooth factory building on St. Clair avenue and E. 76th street. The building will be 330 by 490 feet in size, and two stories high for about half its size. The new factory, with its equipment, will cost fully \$500,000. It will be of brick and concrete, with steel frames supporting the roof. It is to be ready for occupancy by July 1 of next year. Work is now well under way on the foundations. The factory will have its capacity increased from 400 to 1,000 sewing machines a day, the force being increased from 1,500 to 3,500 workmen.

Samuel Mather, on behalf of his deceased wife and mother, has notified Western Reserve University's College for Women that he will erect a handsome new recitation hall as a memorial to his loved ones. The building will cost about \$100,000. Plans are to be prepared during the winter and the building started next spring.

The River Dock Co., which is to have charge of the building of concrete docks and ore-storing bins on Whisky island for the Pennsylvania railroad, has been incorporated at Columbus. The improvements will cost several millions and will be in progress all of next year.

The proprietors of the Lafayette hotel in Buffalo are said to be about ready to build a large new hotel on ground at the southwest corner of E. 9th street and Huron road. The building, if completed as planned, will cost nearly \$1,000,000, and will be ten or twelve stories high. Property across the road, occupied by the Y. M. C. A., is also under option for hotel purposes.

The contract for a \$30,000 concrete mausoleum for Brooklyn Heights cemetery was let during the past month to the Hunkin Bros. Construction Co. It has been planned by J. Milton Dyer. The building will be 133 by 30 feet in size and thirty feet high, of solid concrete, with the exception of the interior lining, which will be of white marble. Work is now in progress. It is expected that the structure will be ready for use next summer. It is to contain 400 crypts.

A mammoth six or eight story storage warehouse is planned for Canal road, near the Cuyahoga river. It will connect with Ontario street property by means of a concrete tunnel, and will call for an expenditure of over \$1,000,000. The Terminal Land Co., of which J. H. Fuller, of the Stowe Fuller Brick Co., is president, and Frank Caine, of the National Concrete Fireproofing Co., is secretary, has acquired the necessary land and has made application to the city council for permission to tunnel under several of the downtown streets.

Great abutments of concrete, 100 feet high, have been completed for the new Denison Harvard bridge, which is to span the upper valley of the Cuyahoga river. The abutments are built in the form of four huge pillars, joined at the top. They sink many feet into the ground, where solid foundations were obtained.

About \$80,000 worth of new reinforced concrete buildings are to be erected at Euclid beach, one of the popular amusement resorts of Cleveland. A modern concrete theater, costing \$30,000, is to be built on the site of one destroyed by fire last summer. A \$35,000 power plant is to be erected in another section of the grounds, while the present frame office building is to be replaced by a \$12,000 concrete structure. The management of the park has concluded that, while the initial cost may be greater, it is much better to build of concrete and obviate the risk of loss by fire.

A syndicate of Cleveland men headed by Otto Muehlhauser and H. C. Christy have purchased the Pythian temple, a 6-story building on Huron road. They announce that \$150,000 improvements will be made at once. Two stories are to be added and a large space in the rear is to be used as a site for a modern theater. An arcade will be constructed to serve as an entrance to the theater, which will be leased for vaudeville purposes by Eastern men.

Plans for a group of new hospital buildings, to cost \$1,250,000, have been approved by the city officials, to be erected on the site of the city hospital on Scranton road. The buildings will be put up one at a time, a start being made next year on a power house and service building to cost several hundred thousand dollars. The plans were drawn by Myron B. Voree, former city building inspector. They will be fireproof, concrete being used for all except the outer walls, which will be of brick.

A \$100,000 building, to be used by the General Motors Co., is being erected at Euclid avenue and E. 21st street. It will be three stories high and cover nearly an acre of ground. It is being built by the Wilbrand Co.

A huge concrete freight depot will probably be built next spring on the Central flats by the Big Four and Lake Shore railroads. It will cover several acres of ground and will be accessible to a number of railroads. The real estate departments of the roads are securing additional land to that already owned, and plans are being drawn for the building, which will have many new and novel features about it.

Important improvements, costing \$30,000, are to be made at the United States life saving station early next spring. These include a new concrete dock for the portion now of wood, and also several fireproof buildings.

The cement market in Cleveland has been quite active up to the first of the month, when cold weather set in. Cement has been selling all the way from \$1.05 to \$1.25 per barrel according to the volume of the order. Dealers have very little stock on hand, preferring to run close and stock up with fresh material early next spring.

The Cleveland Builders' Supply Co., which recently absorbed the Kelley Island Transportation Co.'s retail business as well as the Mason's Supply Co., has announced that it will move, January 1, to larger quarters in the Hippodrome building.

SYRACUSE, N. Y.

SYRACUSE, N. Y., Dec. 17.—The plant of the Onondaga Litholite Co. at No. 102 North Beech street, manufacturers of building blocks and builders of concrete sidewalks, was damaged by fire to the extent of \$6,000 December 12. Valuable machinery was destroyed, which will cause the plant to be partially idle for some time. The building is 300x60 feet. President Henry P. Warner said the building loss was \$2,000 and that on machinery \$4,000, all covered by insurance.

The Solvay Process Co., which has extensive quarries at Split Rock, has purchased 500 acres of quarry lands near Jamesville, in four parcels, from Thomas Millen & Co., former cement manufacturers; Dr. B. W. Sherwood, E. B. Alvord & Co., owners of plaster mills, and Fred T. LeStrange. When the company begins to use the stone it will be transported to its plant at Solvay, a distance of fourteen miles, over the Delaware, Lackawanna & Western railroad. No time has been set for beginning work in the new quarries. Lime for the soda ash manufacture will be made from the stone.

BIRMINGHAM AND VICINITY.

BIRMINGHAM, ALA., Dec. 17.—Business conditions in the line of building and building materials have quieted down considerably during the last month. A rainy wave, coupled with the nearness of Christmas, has prevented any large building operations, and this season of dullness will remain at least until the holidays are over.

The Birmingham Supply Co. has disposed of a large amount of "Vulcanite" roofing to the Southern Contracting Co., of Anniston, Ala.

Some 694 tons of sewer pipe were shipped from Bessemer, a suburb of this city, during the past week, to Cienfugas, Cuba, to be used in municipal improvements being made there.

A few days ago the Central Pipe Co., of Bessemer, exported pipe to the amount of 150 tons, for use in Rio de Janeiro, South America.

William P. Palmer, president of the American Steel & Iron Co., and his chief engineer, came to Ensley during the past month to make arrangements for the erection of a plant that will cost \$3,000,000. "We will begin work as soon as possible," said Mr. Palmer, "and expect that we will be able to operate in eighteen months."

It is announced by Thompson & Booth, realty dealers, that a modern 5-story brick apartment building will soon be built at Five Points, fronting Eleventh avenue. The area of the site, which sold for \$25,000, measures 75x240 feet. The building will be utilized for bachelor apartments. Estimated cost, \$40,000.

The town of Elyton filed condemnation proceedings for the right to pass its sewer under the streets of the adjacent municipality of West End. The former place asked the latter for the privilege, but was refused. Without this right of way Elyton would have had to expend an unusually large amount of money. The court decided that West End must grant the permission.

C. M. Burkhalter, the genial local contractor, never seems to be affected by the season, for he always has plenty to do. Among the contracts he has made during the month is one for street paving in Graymont, at \$26,206.55. He also has secured the work of laying 17,900 feet of sewer in Avondale, in addition to sewer work in Birmingham to the amount of \$1,100. He also has received the contract for 4,000 square yards of sidewalk work in Decatur, Ala., and has just completed a 2,500 foot job of street paving in West Blockton.

The Carolina Portland Cement Co. reports business to be good, considering the season. Among its largest customers this month has been the Tennessee Coal & Iron Co., at Ensley. This company bought, in addition to the material used at the above plant, four carloads of cement to repair a washout at Muscota, Ala.

Birmingham contractors are very much interested in the outcome of a controversy between the city board of education and the contracting firm of E. M. Lisle. The board signed a contract with Lisle for the erection of an addition to the Alberto Martin school, but suddenly, for some reason not made public, attempted to cancel the contract. At the request of the board, Mayor O'Brien ordered the contractor to stop work, but Mr. Lisle took no heed of this command. Police officers were dispatched to the school and brought the workers to the police station, where they were warned not to continue their work on pain of being arrested on a charge of trespassing. Mr. Lisle maintains that the board had no right to break the contract, and will contest its action in court.

The General Tiling Co. has done a very pretty piece of work in the tiling of the passenger office of the Southern railway.

The rock crushing plant of the Southern Realty Co. at Doleite, Ala., is very busy at present filling orders for several large contracting companies in this city.

The city council of Ensley has awarded to Copeland & Inglis, of this city, contracts for paving eleven blocks on Ave. E, and several blocks on 19th street. The amount of the former contract is \$36,576.60 and of the latter \$10,029.

For about a year or so there have been many rumors current regarding the erection of a million dollar hotel, but owing to the constant political agitation capitalists were afraid to risk their money. Now, however, with the passing of the last temperance campaign, things have assumed their normal course, and it is stated positively that the hotel will be built. E. C. T. Alexander, of Chattanooga, who leases the famous Patton hotel, of that place, has made an offer to put up one-half of the money required to build the edifice, provided local men will put up the other half. The Chamber of Commerce will take up the proposition.

BALTIMORE.

BALTIMORE, Md., Dec. 18.—With the closing of the year the cement market conditions have changed very little in this city, but the indications are that there will be a vast difference next year, as most of the dealers are anticipating a good year. For months this section has been a battle ground for dealers, and but for the fact that an enormous amount of building has been in progress many firms would have fallen short. As it is, most of the companies have done a fairly good business despite the slashing of prices, and with considerable more work in sight much better conditions are looked for.

Harry B. Warner, secretary of the Security Cement and Lime Co., speaking of market conditions in this city, said: "The business conditions in the territory of our plant, that is taking in Baltimore and Washington and the western part of the state, have been poor during the year, but the indications are that better conditions will exist next year. One noticeable feature of the trade is the fact that there has been a great increase in the consumption of cement, and many persons are realizing its value in building operations. The increased consumption applies principally to Security Portland cement, our new brand, that has been well established and is now being used in practically every department of the United States government, the district of Columbia, the Road Commissions of Pennsylvania and Maryland, and all of the departments of the city of Baltimore. One of our latest contracts is a job of about 12,000 barrels for W. J. Oliver, to be used on Southern railway work south of Lynchburg, Va. The work will start immediately and the shipment of the order has already begun."

Mr. Warner further said the low prices which have existed during the past year had been the means of a better movement in cement and that more of it is being used in construction than ever before.

Work on the new plant of the Security Co., near Hagerstown, Md., is progressing rapidly and will probably be finished on contract time.

Building operations in this city continued in a progressive manner during the month. A report recently issued by the building inspector shows that the amount of money expended for construction in the city during the present year will exceed that of last year by almost \$3,000,000.

Plans for the new Emerson hotel, to be erected on the site of the old Baltimore and Ohio building, at the northwest corner of Calvert and Baltimore streets, are nearing completion and will be submitted to contractors within the next month. The architect, Joseph Evans Sperry, has his force working on the plans day and night, and hopes to have everything ready by the first of the year. The building will be a 15-story fireproof structure, of ornamental design, and will be one of the finest hotels in the country. It will cost about \$1,000,000.

Contractors all over the country are estimating on the construction of the new union station of the Pennsylvania railroad, to be erected on the site of the present structure, on North Charles street. The building will be fireproof and will cost about \$500,000.

PHILADELPHIA.

PHILADELPHIA, Dec. 18.—While this year has superseded all previous ones in the consumption of cement, it is evident that the coming year will be even greater.

On November 25 thirty carloads of cement were brought to Philadelphia from the Lehigh district, to be forwarded by water for coast trade.

Henry Longcope, Philadelphia manager of the Alpha Portland Cement Co., states that their plant is very busy and the prospects for the future are excellent.

Cramp & Co. were the lowest bidders on the proposed addition to the marine barracks at the Philadelphia navy yard. Architects Rankin, Kellogg & Crane provide in their plans for a 3-story structure, 80'x300'. The lowest bid was \$165,000.

The Penn Building Co. has been granted a permit for the construction of a 3-story tenement house, 20'x155'. Architect, E. A. Wilson. Estimated cost, \$20,000.

The Methodist hospital is about to build an annex to cost \$25,000.

Irwin & Leighton have been granted permit for the construction of a 2-story factory, 71'x76'. Estimated cost, \$30,000.

William Steele & Sons Co. have been awarded the contract for the big textile plant for the Friedberger-Aaron Manufacturing Co. The entire cost will be about \$300,000. The first building will be a 3-story structure of reinforced concrete construction, 62'x350'.

The top floor will be entirely free of posts, the roof being supported by arched trusses.

Stacey Reeves & Sons are estimating on an additional 2-story building, 62'x90', at Carpenter and Emlen streets, for the Automobile Club of Germantown. Estimated cost, \$15,000.

Frank D. Williams has started work on the operation of fourteen dwelling houses, three stories high. Estimated cost, \$112,000.

The Turner-Forman Concrete Co. has been granted a permit for the concrete work on the manufacturing plant of Walter H. Jarden. Estimated cost, \$11,500.

Jacob Myers & Sons were granted a permit for the construction of a 3-story annex to the Wills Eye hospital. Estimated cost, \$42,000.

Plans are ready for the proposed Vine street pier, which will be constructed entirely of concrete and will cost approximately \$500,000. The pier will rest on open piling and the part of the substructure above the water will be arched. It will be 2-stories high, 166'x568', with a foundation strong enough for an additional story if wanted.

William C. Smith will erect twenty 3-story store and apartment buildings on the south side of Market street, east of 61st. Estimated cost, \$200,000.

The Haddington Trust Co. is having plans prepared for a 2-story bank building, to be erected at a cost of \$25,000.

Richard L. Humphrey, president of the National Association of Cement Users, who has spent several months in the foreign countries making inspection of building construction for the government, will return this week.

BUFFALO AND VICINITY.

BUFFALO, N. Y., Dec. 18.—Statistics are always dull and uninteresting to the busy builder unless he is personally and directly interested in figures on some particular job, but the facts indicate that the season of 1909 was a prosperous one, and there is every reason to look for even a busier and brighter season for 1910.

"Business conditions at present are quiet," said Manager Schumacher of the Buffalo Cement Co., "but they are as good as could be expected at this time of the year. Using much cement? No, we are devoting our energies to crushed stone. There is quite a demand for this material in macadam road construction and viaduct work. The county did much road building during the past summer and fall and we used large quantities of crushed stone in this line. As there is much road building to be done in these parts next spring, we anticipate a big demand, and the outlook for the coming year is immense. I can say without exaggeration that the year of 1909 was a prosperous and splendid one for our line."

M. A. Reeb & Co., who handle builders' supplies, report a prosperous year. Manager H. Schaefer said cement was in great demand during this year, but there had been a lessening in the quantity used at present, owing to the winter weather.

"The year 1909 has been an excellent one," said Mr. Schaefer. "We had a big and steady demand for Lehigh and Whitehall cement. The prospects for next year are exceedingly bright."

At the office of the Thorn Cement Co. the office attaches were so busy they could hardly spare time to talk. Manager Thorn was out looking after some big contracts. His confidential clerk said the season had been a rushing one all through. As for the coming year, he declared the popularity of cement had been so much in evidence during the past several months that it would prove an even greater factor next year in the building line. All the cement supply men of Buffalo are extremely hopeful of a big trade in the cement line for 1910.

Bishop & Buchanan, of Owen Sound, Ont., and Peterborough, Ont., are reported to have the contract to build a \$50,000 dam at Burleigh Falls, Canada.

Buildings valued at \$1,750,000 were erected in Schenectady, N. Y., in the first eleven months of 1909, which is a heavy increase over the corresponding period last year.

The Globe Plaster Co. has been calling the attention of the public to the house being erected at 740 Lafayette avenue, this city, by Delaney & O'Brien, local contractors. The concern has been making the following announcement: "Simplicity is the keynote of the house, which is entirely covered with Globe cement plaster."

The city of Buffalo has entered into a contract with the Erie railroad for the elimination of the grade crossings of that road in Buffalo. It is estimated that the cost of subways and viaducts to be built will be nearly \$1,000,000. The work may be done piecemeal, one crossing to be completed each year until the entire job is completed.

ST. LOUIS AND VICINITY.

ST. LOUIS, Mo., Dec. 18.—The winter season now being on in earnest, building is largely suspended in St. Louis, except where roofed in, though excavation work is still going on. Preparations, however, are in progress and contracts are being made for beginning operations in the spring on new work, as well as of resuming that on buildings now under way.

The city council has voted favorably on the proposition to allow the building of structures to the height of 250 feet.

Building operations for the month of November show a gain over the corresponding month last year of nearly \$100,000.

A residence is being erected for R. E. Bain at Flora boulevard and Spring avenue after plans made by Architect Geo. W. Hellmuth. It will have sixteen rooms and cost in the neighborhood of \$15,000. It is to be faced with Portland cement over all walls.

A sky-scraper is planned to occupy the block bounded by Sixth, Seventh, Pine and Olive streets by the De Mun Estate Corporation.

Among the estimates for public works sent to Congress is \$775,500 to complete the new postoffice.

Plans of the commissioner of school buildings for the new Madison school, to be built at Seventh and La Salle streets, have been approved and bids will be asked to construct the building, which, it is estimated, will list in the neighborhood of \$190,000. It will be a 3-story brick, fireproof, and contains 24 rooms.

A building to cost \$40,000 will be erected at the corner of Clarence street and Delmar avenue, to be occupied as a garage by J. R. Brown. It will be three stories high, of brick with stone trimmings.

The W. J. Lemp Brewing Co. has secured a permit to build a boiler house at 3501 South Broadway, to cost \$65,000. Also a smokestack, to cost \$30,000. This stack, when completed, will be the highest in St. Louis, being 250 feet. It will be of brick trimmed with terra cotta, and will measure 12 feet in diameter inside, and the square base will be 25 feet on a side. The work is being done under the direction of Walter L. Flower.

F. W. Choisel, secretary of the Building Industries Association, has resigned and F. G. Boyd, of Baltimore, has been selected to take his place. At a recent meeting of the association Prof. Louis Spiering, of the department of architectural design in Washington University, gave a lecture on the architecture of the Louvre.

The St. Louis Mortar Co., which will manufacture mortar by machinery, has filed articles of incorporation. The capital stock is \$50,000, fully paid up. The company will begin work at once at the foot of Dock street, on a \$6,000 plant. It expects to be able to turn out and deliver 400 wagon-loads of mortar daily, ready for use. Peter Schwietz, president of the company, recently invented and patented a mortar-mixing machine. Mr. Schwietz is the principal stockholder.

T. J. Davidson, of St. Louis, former president of the Frisco line, has received an offer from James Stewart & Co., contractors, to act as railroad expert. The Stewarts have in the past devoted themselves chiefly to building construction. Recently they have been showing greater interest in railroad construction, and have already several large and important contracts in this line.

Bids were recently opened for the new Ashland school, to be erected at Newstead, San Francisco and Margaretta avenues. C. O. A. Brunk bid lowest, at \$189,512. The board of education estimate on the cost was \$190,000. The building is to have 22 rooms.

The Jews of East St. Louis have raised \$68,000 toward the new \$100,000 synagogue, to be built on Gatz Avenue, near 12th street.

Bauer Bros., the only Belleville bidder on the contract for the new Belleville postoffice, recently received the figures of the contractors offering proposals. The treasury department had placed the maximum figure at \$71,000, but the lowest bid, that of McHenry-Beatty Co., East Liverpool, Ohio, was \$3,600 higher than this estimate. This is the third opening of bids on this contract.

The O. T. Dunlap Construction Co., of Edwardsville, has transferred its contract to build the outlet sewer in East St. Louis to the Lorimer-Gallagher Co., of Chicago. This contract was taken by the Dunlap Co. a year ago at \$735,000, but for one reason or another, very little progress has been made. Recently the two companies have joined hands for the building of the sewer and a new bond for \$150,000 has been given.

THE TWIN CITIES.

MINNEAPOLIS, MINN., Dec. 20.—The building record for 1909 for the Twin Cities and for the Northwest is the greatest ever made. Practically every month has shown a wholesome gain, and the totals will show a marked increase over a year ago. Already the totals are in excess of last year, with December totals yet to be added. The season as a whole has been a remarkably good one. The opening of the year saw many contracts go at figures that were too close for comfort, the feeling being that the season was hardly likely to be active, and it took several months before it was realized that there was to be work enough for all and that too close figuring was likely to prove expensive. When this fact was established it was better for all concerned.

In November Minneapolis issued 425 building permits for work estimated to cost \$1,056,385, which makes the total of eleven months \$12,237,240, or over \$200,000 in excess of twelve months of last year. It is expected that December will bring the total up to \$13,000,000.

The St. Paul building totals, as shown by the November permits, were \$1,568,535, as compared with \$910,135 for the same month of a year ago. The total for eleven months is \$11,526,902, an increase of \$4,788,388 over last year and a gain of 71 per cent.

The number of large structures involving reinforced concrete construction, in whole or in part, is larger than ever before.

A Minneapolis wholesale house, which had an order from a sub-contractor for material to be used on a job in Montana, wrote the owner of the building as to the sub-contractor's reliability. The answer outlined the sub-contractor's terms of payment, and added, "We are prepared to meet these terms with Mr. _____, so you are perfectly safe in shipping him this material." The wholesaler accepted the "letter of guarantee" and shipped the material. The sub-contractor did not pay and the hotel company was sued, losing in the lower court, but the federal court has reversed the judgment of the trial court.

E. F. Burchard, of the Geological Survey, has been working on an investigation of concrete, brick and other materials produced in the state of Minnesota, to be used in connection with the erection of government postoffice buildings. Mr. Burchard has now gone South, to Missouri, Texas and other states.

B. L. Babcock, a Minneapolis contractor, has gone to Cuba to build a concrete hotel, which will be located about thirty miles from Havana.

C. A. P. Turner, engineer, inventor of the Turner mushroom system of reinforced concrete, has contracted to install in buildings located in various parts of the country a total of nearly 500,000 square feet of floor work.

The Minneapolis Builders' Exchange has had an increase of fifty percent in the number of plans left with the exchange for figuring during 1909. And the outlook for 1910 is for a still greater number.

Charles G. Davis, of the Davis Construction Co., of Minneapolis, is making an extended trip through the far West, and will be gone four months.

Plans have been completed for the new Shubert theater building in St. Paul with a 9-story hotel building in connection. Cameron & Co. have the general contract for the building, which is to be erected by the Hamm Realty Co. The entire building will be of reinforced concrete construction, with brick and cut stone exterior walls. Cost, \$100,000. Buechner & Orth, of St. Paul, are the architects.

The Lowry estate, being that of the late Thomas Lowry, the street car man of Minneapolis and St. Paul, has had plans prepared by Kees & Colburn, architects, of Minneapolis, for rebuilding the Lowry arcade in St. Paul, to an 8-story modern office building. The exterior walls will be of brick, with the interior of reinforced concrete construction. The work will be started next April. Cost complete, about \$700,000.

The W. J. Hoy Construction Co., of St. Paul, has taken the contract for the erection of a storage warehouse for the West Side Paper Stock Co., of St. Paul, at Starkey and South Wabasha streets. It will be three stories high, of reinforced concrete construction, 80x80 feet in size, and will cost \$30,000.

Christopher Ash & Co., of St. Paul, have been awarded the general contract for the erection of the new West End high school, at \$323,746.

The Cameron Transfer & Storage Co., of Minneapolis, contemplates the erection of a fireproof storage warehouse, of reinforced concrete construction, which may reach \$125,000 in cost.

The Sullivan-Considine Theater Co. contemplates erecting new theaters in Minneapolis and St. Paul, to be ready for the season of 1911. Buildings to cost \$150,000 each are proposed.

The John M. Ewen Co., of Chicago, has been awarded the contract for the erection complete, except the elevators and some minor details, of the Plymouth Clothing House building, Minneapolis, at Sixth street and Hennepin avenue. The contract will run between \$1,100,000 and \$1,200,000. The excavation is under way for the basement and sub-basement. The building will be twelve stories high, the first two stories to be of granite exterior walls, the next nine to be of brick and the upper one to be of terra cotta. John E. Andrus, of Yonkers, N. Y., is the owner. Long, Lamoreaux & Long, of Minneapolis, are the architects. The building is to be completed about September 1, 1910.

The general contract has been awarded to erect the new dormitory for girls at the state university in Southeast Minneapolis, to the J. & W. A. Elliott Co., of Minneapolis, on revised figures, at \$85,940.

Pike & Cook, of Minneapolis, have received the general contract for the erection of the McKnight building at Eighth street and First avenue south, in Minneapolis. It will be four stories, of steel and brick construction, fireproof throughout, costing \$100,000. William M. Kenyon, of Minneapolis, is architect.

Olaf Swenson, of St. Paul, was awarded the general contract for the erection of the state hospital for deformed children at Phalen Park, St. Paul, to be of hollow brick, plastered, and tile roof, 185x154 feet in size. Cost, \$50,000. C. H. Johnston, of St. Paul, is the architect.

The Russell-Miller Milling Co., of Minneapolis, has started work for a 1-story warehouse addition, adjoining its mill in Minneapolis, the foundations and walls going in so that in the future it may be run up to six stories and utilized for a duplicate of the present mill. The walls will be of white sand lime brick, the floors and foundations of reinforced concrete. The addition, as planned complete, will cost \$125,000. The H. N. Leighton Co., of Minneapolis, has the contract.

The H. N. Leighton Co., of Minneapolis, has been awarded the contract for the erection of a 7-story addition to the wholesale warehouse of Wyman, Partridge & Co., Minneapolis. It will be 56x152 feet in size, and will conform to the original structure. Cost, \$150,000.

The J. & W. A. Elliott Co., of Minneapolis, has received the general contract for the erection of the new store and office building at Nicollet avenue and Ninth street, Minneapolis, for the Nicollet Associates. It will be part two and part four stories, and will ultimately be run up to eight or more stories.

Rev. James M. Cleary, pastor of the Church of the Incarnation (Roman Catholic), Minneapolis is raising funds for the erection of a new church to cost about \$50,000, at Thirty-seventh street and Pleasant avenue.

The W. J. Hoy Construction Co., of St. Paul, has the general contract to erect a 3-story brick building adjoining the new Hotel St. Paul, in St. Paul, to be 100x104 feet. It will be used in part for sample rooms for the hotel. Cost, \$60,000.

Forced to Enlarge Its Works.

AKRON, O., Dec. 17.—Extensive improvements will be made in the plant of the Akron Gravel & Sand Co. for the purpose of meeting, so far as possible, the greatly increased demand for this company's product. This plant was built the year before last by the J. C. Buckbee Co., and it was thought at that time by its owners to have a capacity much in excess of what could be sold. On the contrary, the plant has been unable to keep up with orders, working overtime all of the past season. The improvements to be made this winter will result in an increase in capacity of about twenty-five percent. The same engineers have made the plans for the additions.

Head of Lime Co. Drops Dead.

NEW YORK, Dec. 20.—T. J. Bloomer, 76 years old, president of the Bloomer Lime Co., dealers in building materials at 290 Front street, was found unconscious on the floor at that address Friday night by Policemen Sheehan and Gates. He died on the sidewalk before Dr. Spalding could arrive from Hudson street hospital. The police believe apoplexy caused his death.

Mr. Bloomer was the father of Millard J. Bloomer, editor of the *Harlem Local*, and president of the Home Life Publishing Co., and Harvey N. Bloomer, a real estate dealer.

KANSAS CITY.

KANSAS CITY, Mo., Dec. 18.—The past month has been a good one for building operations in this city, the weather has been especially fine and contractors have all been making good headway. The depot directors met the latter part of November, approved the plans for the new union depot, and stated that active work would begin as soon as possible and would be pushed to completion with all possible speed, as the railroads need the additional facilities. It is estimated that it will take two years to complete the structure, and the terminals will be ready by that time. One director stated that by March 1 next they would have 5,000 men at work.

Cement and plaster are moving out of the plants steadily, but are going very largely to dealers. Cement is being regularly shipped from this city to points in Mexico, as well as in all directions in this country, but there is no scramble for business at the present time. One of the companies reports having refused to book a big order for next spring delivery at the prevailing market price at the present time.

George E. Nicholson, president of the Iola and United Kansas Portland Cement Companies, has made application for \$1,500,000 in life insurance as a matter of protection to his business associates. It is understood that the policy is to be issued for five years, and that Mr. Nicholson will then have to pass another physical examination before it can be renewed. He is now 49 years of age, and already carries three policies on his life of \$325,000 each.

George H. Shaw has been awarded the contract to build a 28-foot span reinforced concrete girder bridge on the Spring Branch road, just east of Independence.

E. W. Hayes has taken out a permit for the construction of a 7-story warehouse, to be built of steel and concrete, at 2001-5 Holmes street, and to cost \$75,000.

Work has been begun on the office and church building of the Grand Avenue Methodist church. The office building is to be ten stories high, of steel construction, and will have a 96-foot front on Grand avenue and 44 feet on Ninth street, while the church will have a 71-foot front on Ninth street. A light colored enamel terra cotta will be used for the exterior of the first two stories and cornice story of the office building, and for the entire front of the church, and the other stories of the office building will have a bronze brick exterior. The two buildings will cost \$300,000.

The Freeborn Engineering Co. has been awarded the contract for the construction of a water system, purification plant and tower at the county farm (Wyandotte county) at a cost of \$24,500.

The Zahner Manufacturing Co. is planning the erection of a reinforced concrete building at 12 West Tenth street. The first floor will be occupied by the company for its hardware store.

The following contracts have been let on the Thos. B. Cusack Co. building: Brick work to H. A. Coul and J. Lang; brick to Eadie Building Supply Co.; reinforced concrete to Frank G. Cudworth; cement to Roll Lime Co.; sand to Stewart-Feek Sand Co.; columns to Western Terra Cotta Co., and metal work to Monarch Metal Co.

J. H. Felt & Co., of this city, are preparing plans for a \$17,000 public school building, to be erected in Bonner Springs, Kas.

The Kansas City Structural Steel Co. has been awarded the contract for furnishing 1,500 tons of steel for the new stock yards exchange building.

The Urban Construction Co. has been awarded the contract for building an addition to the packing plant of Swarszchild & Sulzberger, which will cost \$20,000. The same company has the contract for a 2-story building for the Belfast Investment Co., at Sixteenth and Grand streets. The walls will provide for a 7-story building in the future and will have reinforced concrete basement and floors.

The contract will soon be let for the construction of a \$125,000 theater building on McGee street, between Eleventh and Twelfth, for the use of Considine & Sullivan. It will be two stories high in front and five stories in the rear, and will be of fireproof construction.

The Concrete Tile & Construction Co. has been incorporated in Sikeston, Mo., with a capital of \$5,000, by J. A. Young and others.

The City Ice & Storage Co. is soon to begin the erection of a large storage house at Twenty-second and Harrison streets.

John T. M. Johnson has taken a 99-year lease on the southeast corner of Tenth and Walnut, and early in 1911 will begin the construction of a 12-story building, to cost not less than \$250,000.

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TOLEDO AND NORTHWESTERN OHIO.

TOLEDO, O., Dec. 18.—Architects and engineers have little on hand that needs immediate attention, but nearly all have a great deal of preliminary work for spring.

Few contracts have been awarded during the past month, the only one of size being the new building for the Toledo Aerie of Eagles, the contract being secured by John Auknenbrandt, who is now engaged in placing the concrete footings and foundation. Bids for the new partially concrete building to be erected by C. M. Spitzer have been rejected and the project will probably go over until next spring.

Municipal bodies are busy reorganizing as the result of the recent election. J. R. Cowell has been appointed director of public service, and will hereafter be the man who will have charge of awarding all contracts. He succeeds a board of three members.

Harvey S. Platt is taking another shot at the proposed new Cherry street bridge, he having been the one who has been largely responsible for the delays occasioned thus far. After being defeated in practically all the courts on the original bond issue, he has again appealed to the courts to prohibit the issuance of additional bonds in the sum of \$300,000, as was voted by the city council some time ago. These additional bonds, as explained at that time, are necessary to cover the cost of the bridge over the estimated expense at the time the original bonds were sold.

Building supply circles have been brought into prominence by the incorporation of the Superior Supply Co., to which reference was made in the October ROCK PRODUCTS. While the company is incorporated for the nominal sum of \$30,000, it is understood to have almost unlimited financial backing. A. B. Luten, local representative of the Metropolitan Paving Brick Co.; William C. Brown, local manager of the Phillip Carey Roofing Co., and Samuel Hildebrand, a prominent contractor, are the active men in the organization. Options have already been taken on dockage and yardage.

The W. O. Holst Builders' Supply Co. has made a number of improvements in its yard, among others being the erection of a sand bin, which will increase the speed of the company for loading material in wagons. In unloading from the sand scow, the sand will hereafter be dropped into this bin, from which a chute will drop it direct into a wagon, thus eliminating all shoveling.

The Woodville Lime and Cement Co., whose main offices are in Toledo, is at present building three additional kilns at its Woodville plant. This company is contemplating the duplication of its plant by the erection of another alongside the present one. William Urschel is president and manager of the plant, while J. J. Urschell is general manager and director of the general scope of the concern.

Plaster men generally are hopeful as to the outlook for business and anticipate an advance of about 50 cents a ton about the first of the new year.

C. W. Doane, of Huntington, Ind., spent several days with Toledo friends during the month. Mr. Doane was formerly connected with the Toledo office of the Ohio and Western Lime Co., but when the Toledo office was discontinued, moved to Huntington, Ind., where he is employed by the company.

Samuel Hildebrand and Irving B. Hiett have under consideration the organization of a company to erect poured concrete houses. Mr. Hiett is at the head of a large real estate firm which annually builds a large number of working men's houses costing from \$1,200 to \$1,800, his new proposition being to change the kind of construction from frame to poured concrete.

Reports from various plants of the Ohio and Western Lime Co. are to the effect that this company has had a good year and that numerous improvements are in preparation for next year. Of the twelve plants operated by this company, nine are in northwestern Ohio.

The Toledo Builders' Exchange is arranging for a series of monthly entertainments during the winter. Some of them will be limited to members, while the others will be for families and friends of the members as well. It is also remodeling its quarters by increasing its card and plan rooms.

John Nagy, concrete block manufacturer, reports an unusually heavy year, with the outlook better than it has ever been before. Mr. Nagy has just increased the capacity of his plant.

William J. Spear, concrete and general contractor, is erecting a large sugar beet factory and warehouse at Paulding, Ohio.

J. W. Weldon, local manager of the France Co., crushed stone dealers, reports a good fall business. The main offices of the company will shortly be moved to Toledo, in connection with the local office, which

is located at 516-518 Ohio building. The quarries of the company are located at Bloomville, Dunkirk, Holland, Middlepoint, North Baltimore and Waterville, all in Ohio. Some of these plants have been run overtime to take care of orders.

Hiram Davies, general manager of the Davies Cement Paving Co., reports the most successful year the company has ever had. It has increased its force to 50 men, who are steadily employed.

L. H. Barnes, manager of the West Toledo Concrete Co., is a fine example of what a live, aggressive man can do in handling concrete blocks, laying concrete walks, etc. A couple of years ago he started in a small way and now has a business that taxes his ability.

Architect George S. Mills is taking bids on the new store building for Tiedtke Bros. Foundations and much of the superstructure will be of concrete, the cost of the building running considerably over \$100,000.

One of the finest semi-concrete structures to be erected in this territory this season is the new public school building at Metamora, Ohio, the general contractor for which is J. R. Crepps, Lyons, Ohio. The foundations and all the landings throughout the building are of concrete. The plastering, which is being done by day labor under Mr. Crepps' direction, is an exceptionally fine job.

Frank I. Consaul, who for the past six years has been city engineer of Toledo, and for fifteen years previous had been connected with the engineering department, will join the Acme Builders' Supply Co. after the first of January. He has formed a business connection with this company and will devote his entire time to the business. It had been the wish of Mayor Whitlock to have him remain in the city's employ as first assistant to G. W. Tonson, who has been appointed as his successor, but Mr. Consaul declined. Claude Schmitt, who was city salesman for the concern prior to going to Oklahoma, has returned to this city and has resumed his old trade of plastering.

Architect D. L. Stine, of Toledo, has been retained by the Fremont Board of Education to represent it in determining the cause of the partial collapse of the new high school building of that city which is now under construction. The foundations of the building are of concrete. Early reports were that the trouble was caused by quicksand beneath the foundations, which had not been sufficiently removed. Later reports, however, question this and the exact cause will probably not be known until after the examining board, consisting of Architect Stine, an engineer yet to be appointed, and a representative of the original architects of the building, Hearsh, Seales & Gavin, Cleveland, have made their report.

Arthur Munz, of the Buckeye Builders' Supply Co., says business has been good up until the first of December, when weather conditions called at least a temporary halt on operations. He anticipates a banner season for 1910.

Get Sand and Fish Both.

CENTRAL CITY, NEB., Dec. 18.—The Platte River Sand Co., of Louisville, Neb., is to establish a sand station in the Platte river south of town with the expectation that when the machinery is installed and everything is in working order it will be able to ship about fifteen or twenty carloads a day.

Mr. Ritchey, the president of the company, was here last week to see if there was a sufficient depth of sand to justify the tract being worked. Upon drilling he found a depth of forty feet of river sand, and accordingly the installing of the machinery will be commenced at once.

Before the sand is all removed it is expected that an excavation sixty rods wide, 600 feet long and thirty feet deep will have been made and the big artificial lake thus created, R. S. Powell, the owner of the land, intends to stock with fish, making a great fishing resort.

New Sewer Pipe Company.

ROME, GA., Dec. 18.—The Morrison-Trammell Brick Co.'s plant on the east side has been sold to D. B. Hamilton, Jr., and C. C. Harper, who have organized the Standard Sewer Pipe Co., and will manufacture sewer pipe. They will install new machinery and increase the capacity of the plant, employing seventy-five men.

Cement Operations in Nebraska.

KEARNEY, NEB., Dec. 16.—President McLaughlin has announced that the Nebraska Portland Cement Co. expects to spend \$1,000,000 in establishing a factory near Superior to work the cement bluffs. Options have been obtained on a lot of land.

THE WEST COAST.

SAN FRANCISCO, Dec. 15.—Building records in San Francisco show quite an improvement, the valuation being about on a level with that of a year ago, and fully normal for this time of year. The increase is attributed largely to the replacing of temporary structures in the business district with permanent buildings. The outlook is for a marked improvement during the coming year, as there is now a strong demand for more space in business buildings, owing to the demolition of the temporary structures erected after the fire without permits.

Weather conditions have had considerable effect on the cement trade all over the Coast for the last few weeks. Heavy storms have been experienced throughout the territory, with freezing weather in many places, effectively stopping all kinds of work except building in the larger cities. Serious floods have occurred in some sections, causing destruction of many wooden bridges, etc., which will probably be replaced with concrete works next year. The immediate demand for cement is limited, and deliveries are much smaller than last month, and the actual movement is not expected to increase materially before spring, as the indications are for a severe winter. All the Coast plants are still in full operation, and the surplus production is being stored in anticipation of an active market. There is no pressure to sell in any quarter, the level of prices being firmly maintained. A number of large inquiries are now coming up for next year's requirements, and contracts covering most of the output for the first half year will probably be let within the next thirty days.

Municipal, state and government work will continue to be a large factor in the concrete industries. San Francisco bonds for \$4,000,000 have just been sold for the prosecution of a number of projects now under way. Of these, the fire protection system will continue to use large amounts of concrete, as will the sewers, public buildings and garbage crematory. An election will be held shortly to determine the question of the purchase of the Spring Valley Water Co.'s system, and to provide for carrying out the Lake Eleanor project. If this work is undertaken it will involve the use of an enormous tonnage of cement. The city of Oakland has issued bonds for extensive harbor improvement plans, and private parties plan a similar development on the Alameda waterfront. The city of Los Angeles is preparing to issue \$3,000,000 of bonds for docks, warehouses and street improvements. Arrangements have been made for crushed rock for the Columbia river jetty, but work has been stopped for the season on account of bad weather.

San Francisco's new building law, on which a committee of the supervisors has been working for several months, has been passed. It limits the height of Class C structures to 84 feet, and makes wooden buildings of more than three stories impossible except on steep slopes, where half the building may contain four stories.

The Golden Gate Brick Co., which manufactures sand-lime brick at Antioch, Cal., reports a good market for its sand, of which it has recently shipped 700 carloads, 500 being on a contract for the city of San Francisco.

The Santa Cruz Portland Cement Co. conducted a special excursion to its Davenport plant near Santa Cruz, Cal., last Saturday, getting together the largest party of architects, builders, etc., that ever met for a similar purpose on the Coast. The party numbered about seventy people, who were entertained at Santa Cruz Saturday night, making their inspection of the works the following day. Several architects who have formerly been partial to foreign cement were convinced that the home product is fully equal to anything imported. Many improvements have been made in the plant this year, including a stock warehouse with room for 1,000,000 sacks.

Mr. Cowell, of the Cowell Portland Cement Co., says prospects for 1910 could hardly be better. He reports a satisfactory business in the northern cities and says concrete construction is steadily increasing all over the Coast. This company's San Francisco business has been growing rapidly since the new plant was started. The salesmen are now working for some large contracts for next year. At the plant, steady progress is being made toward the increase of the output and greater economy.

J. W. Dower and C. E. Cameron, London capitalists, have secured a site at Long Beach, Cal., for the manufacture of plaster of paris. They expect to begin putting in machinery in about two months.

The Sierra Lime & Cement Co. has leased a lime kiln near Jacksonville, Cal., and will start operations about the first of the year. They expect to keep the plant going all season.

The Lithoplast Manufacturing Co. has been incorporated in Los Angeles, Cal., with a capital stock of \$50,000, by D. R. Warden, G. W. Harding, G. S. Rogers, W. A. Alderson and J. V. Theis.

A report on the operations of the San Francisco municipal asphalt plant shows that in the past seven months 1,191,396 square feet have been paved at a cost of \$125,603, the estimated cost of the same work by contract being \$196,580.

The Payne Cement & Tile Co. has been incorporated in Los Angeles with a capital stock of \$150,000, by B. E. Payne, J. F. Wiley, R. S. Schmidt, H. E. Higgins and C. F. Bailey.

Thos. Jones, manager of the H. T. Holmes Lime Co., says the Alabaster kilns near Auburn, Cal., will be opened shortly. At present only one of the company's plants is being operated. Most of the output is sold to the Nevada mines.

The San Francisco Fireproofing Co. has taken a \$10,265 plastering contract for Boalt Hall, at the University of California.

The Harbor Commission has awarded the contract for paving East street, facing the new wharves, to Flinn & Treacy for \$33,350. The paving will be done with basalt blocks. The contract for pier 54, of reinforced concrete, was placed with the Thompson Bridge Co. for \$132,000, and the Healy-Tibbets Construction Co. secured the contract for 1,000 tons of rock to complete section 11 of the seawall.

The People's Portland Cement Co. has been incorporated at Spokane, Wash., by F. R. Clarke, P. N. Clarke, H. A. Bossat, A. S. Ford, J. Vanderbogen and S. L. Babcock, with a capital stock of \$200,000.

The structural work of the new Pacific Union Club building is to be of reinforced concrete, the contract going to the Rickon-Ehart Construction Co. for \$39,000.

The Grays Harbor Concrete Co. is installing improvements to the value of \$25,000 at its factories at Hoquiam and Aberdeen, Wash.

The Northwest Liane Co. has started work on a large plant near Kendall, Wash.

H. F. Baker is putting up a plant for the manufacture of ornamental cement work at Boise, Idaho.

SPRINGFIELD, ILL.

SPRINGFIELD, ILL., Dec. 20.—The plant of the Springfield Filler Co., at Manito, Ill., which was burned last summer, will be rebuilt of steel and concrete.

Herman Schoenberg, of the Nashville (Ill.) Pressed Brick Co., and Miss Mary Lilliakamp, were married December 9 at Nashville.

Creditors of J. D. Richmond, contractor, who is charged with abandoning the work on the Greenfield (Ill.) high school before it was completed, announce that they have decided to bring suit against his bondsmen, J. E. Walton, of Medora (Ill.), and W. L. Morely and Judge Wurdeleman, of Old Orchard, Mo. The board of education has only \$800 of the building fund left, while the claims of the creditors aggregate nearly \$4,000. Among the principal creditors are: John P. Hayden Slate Co., St. Louis; Richards Brick Co., Edwardsville, Ill.; Mesker Bros., St. Louis. Suit, it is announced, will be brought in Macoupin county, Illinois.

The Western States and Tile Co. announces that it will equip the old glass factory at Paris, Ill., and manufacture concrete fence posts, building bricks and tile. D. G. Van Backman is president and W. C. Grant is secretary. Both are from East St. Louis.

Removal of the collapsed bridge from the Illinois river at Peoria is one of the problems with which the city council is dealing in figuring upon a new wagon bridge. An ordinance authorizing the issue of \$250,000 bonds for a new structure is hanging fire. It is announced that the piers will go to bed rock whatever the cost. J. R. Fuller, junior engineer for the navigation department of the upper Illinois river, suggests that the new bridge be built on the site of the old one, and the contractor, in accepting the work, be compelled to remove the concrete debris. The order of Major C. S. Ritchie, of the war department, that the ruins be taken from the river, which is a navigable stream, has not been obeyed, and this, it was said may cause the city some inconvenience in securing a permit for a new span.

Farmers near Moline interested in good roads and improved thoroughfares in the city, as well as in the rural districts, have subscribed a fund of \$2,300. A portable stone-crusher has been furnished by W. L. Velie, who has a quarry on his farm, and he will supply the stone while the farmers will do the grading and hauling on the roads.

The Mt. Carmel (Ill.) Gas & Electric Co. is building an addition 50x80 feet to its plant. Concrete blocks are used.

CHICAGO.

CHICAGO, ILL., Dec. 20.—Manufacturers and dealers in the cement trade feel satisfied with the business done this year and are optimistic as to that which they feel will be done the coming year. The demand for cement before the cold snap this month was good, but has fallen off some since and will remain quiet until moderate weather sets in. There is more work under construction and on the boards in architects' offices now than there has been at this season for many years past, and which will require probably far more cement than was used in any twelve months in this city. Prices, which were unsettled all year, have become more uniform and show more strength. The condition of the building material market is healthy and activity is expected in 1910.

"Cement is below zero," smilingly said Gold Williams, Chicago representative of the Marquette Portland Cement Co. "The cold weather has simmered down to supplying a few odd jobs, and there will be very little real business till the weather moderates. Our trade for the year has been good. We have made many new friends and customers, and expect to do a great business next year, as everything points that way. We have just finished deliveries of 54,000 barrels of our cement for the Grand avenue viaduct at Milwaukee, which is said to be the largest concrete viaduct ever built.

"Shipments were only fair this month before the cold spell," said J. U. C. McDowell, sales and traffic manager of the Chicago Portland Cement Co. "There practically will be little demand for cement while extreme cold weather continues, although more cement is now used during the winter months than formerly. Builders do not like to take chances, and will wait for more moderate weather. It has been a very satisfactory year, except as regards prices. There is more work in sight now than there has been in years at this time, which gives promise of an extraordinary good year for 1910. Preparations are being perfected to make the coming cement show a howling success."

"I have just returned from New York," said Geo. W. DeSmet, distributor of Vulcanite Portland cement, "and can only say that there is little doing this month. Up to the commencement of cold weather the demand was good, but since then it has been very light. This is a condition which will last till the weather moderates. The year's business has been very large and I can say satisfactory. Prospects were never brighter for a remarkably good business year, and everybody in the trade is feeling cheerful. Prices, it is believed, will improve from now on."

"Demand for cement good before cold snap this month, dead now," was the way B. F. Affleck, of the sales department of the Universal Portland Cement Co. put it. "Prices have been low," he continued, "but will improve. This has been a good year for us generally, and especially in point of volume of business. We expect great things of 1910, and all indications point to a realization of our hopes. Great interest is being taken in the coming cement show, and it is felt that its attendance will be 30 to 40 per cent larger than that of last year."

"The season of the cement trade has practically closed," said Edward L. Hennessy, manager of the western branch of the Alpha Portland Cement Co. "The year with us has not been unsatisfactory, as we have sold a greater quantity than last year, but we have not gotten the prices to allow a reasonable margin of profit. There are large orders in sight for next year, and everybody is imbued with a spirit of optimism. The demand before the cold snap came this month was good, but since then it has been very light, which is natural and was expected."

Edward L. Cox, general sales agent for the German-American Portland Cement Works, said speaking of the conditions in the cement industry: "We have had a very comfortable year, satisfactory in every way regarding amount of business we have done, but prices have been too low. There is a very large amount of work in sight requiring vast quantities of cement for the Chicago market, which makes a good feeling among cement manufacturers. There undoubtedly will be an advance in prices next year. The demand for cement was good the first two weeks of this month, but since the cold snap set in there has been nothing doing. We believe we will do a great business next year."

"We certainly were kept on the jump, pumping in cement in great shape the first two weeks of this month before cold weather set in," said E. A. Mullan, of Sandusky Portland Cement Co. "Since then the demand has been very light, because building operations have been checked by the cold weather and there will be a dull period now until after January 1. Our mills at Dixon, Ill., and Syracuse, Ind., will be kept running full time, as it will give them an opportunity to accumulate cement stocks which had been reduced to an extremely low point at these mills. We have closed several contracts for next year's delivery

at good prices. We shall have a fine exhibit at the cement show next February. There is a great deal of enthusiasm and interest shown in the coming exposition, and everybody is using his best efforts to make it a great success."

"Cold weather has shut off all building operations, and consequently there is no demand for sand or gravel this month," said P. M. Richardson, president of the Richardson Sand Co. "But the year now closing has been a busy one for us, and on the whole satisfactory. We do not expect any business now until next spring, but shall be kept busy repairing machinery and brushing up our equipment during the winter months in expectation of a great year's business, which is certain to keep men in building operations busier than they have been in many years past."

"Our volume of business in sand and gravel this year has been more than satisfactory, but the margin of profit has been altogether too close for the investment and risk taken in conducting the business," said E. S. Atwood, of the Atwood-Davis Sand Co. "Prices are lower than rule in any other building material, and indications are that they will advance when the year's business for 1910 sets in next spring. From present work in sight next year's business promises to be extraordinarily good. In the meanwhile we shall be busy repairing machinery and making other preparations to take care of the great business that is coming next year."

Plans have recently been completed by the J. C. Buckbee Co. for a crushing plant of 1,200 yards daily capacity for the Chicago Union Lime Works, Nineteenth and Lincoln streets. This plant is of most modern design throughout, being provided with electric motors for driving rolls for recrushing, and automatic devices throughout for handling the stone. The bins will be of reinforced concrete of about 1,500 cubic yards capacity. All of the buildings and structures will be of steel and the walls and roofs of fire-proof material. Construction work on this plant was started about thirty days since, and it is expected the plant will be completed about the middle of March. This will be the most modern small rock crushing plant in the Chicago district. The equipment in the present plant will be removed and an entire new installation made. This will include a 7½ McCully crusher and other machinery to be furnished through the Chicago office of the Power and Mining Machinery Co.

W. G. Crolius, manager of the paving brick department of the McLaughlin Building Material Co., said: "We have had an unusually big and increasing volume of business this year, and have sold over 80,000 barrels of Chicago A. A. Portland cement, 30,000 barrels of which have been used in the new city hall which is now nearing completion. The year has been an exceedingly active one with us and with the amount of work in sight at the present time, 1910 promises to break all records of the past in building operations. Prices for all kinds of building material have become more uniform and show a slight advance this month."

The Artesian Stone and Lime Works Co. has leased from the trustees a triangular piece of ground north of the Hately Cold Storage Co. on Iron street, between the Chicago Junction tracks and the south branch of the river. The property will be used as a general material yard for the company's Chicago trade.

James E. Lill's manager, B. A. Benson, said business has been much better than last year and that prices for building material had remained unchanged. In the districts of Edgewater, Rogers Park and Ravenswood a greater number of large flat buildings are under construction this fall than in former years. The expectations, based on unmistakable indications, are for an exceedingly good year in 1910.

Weber Concrete Chimney Company.

The Weber Concrete Chimney Co., formerly located in the Marquette building, has been reorganized and is now occupying quarters at 225 Dearborn street. President R. A. Steen reports a good increase in business during the past six months, but qualifies his statement by saying:

"I am unable to explain it, but, despite the fact that the past six months have brought a decided improvement in trade conditions, September was the dullest month we have had in a long time. The outlook for the future, however, is very bright, and we are now booking some big orders."

Death of Maine Lime Maker.

ROCKLAND, ME., Dec. 17.—Isaac C. Gay, surviving member of the lime manufacturing firm of A. C. Gay & Co., and president of the Rockland Towboat Co., died December 7. Death was due indirectly to a fall on the ice last winter, which affected his brain. He was 58 years old and leaves a widow, son and daughter.

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ROCK PRODUCTS

"FIREPROOF BUILDING DESIGNS."*

By M. J. REINHARDT, C. E.

In taking up this subject of "Fireproof Building Design" I will first of all take the liberty to limit the scope of my paper to include structural designing only, the part which is more in the nature of engineering than architectural work.

There may be some question among the designers and erectors of buildings as to what constitutes a fireproof structure. At one time, not many years past, any building constructed of non-combustible materials in the main part, with plenty of wood finish in the interior, was regarded as fireproof; but this assumption has long since been proven false. Great fires in two of our cities have convinced us that many of the buildings then thought to be safe against fire destruction, even by the most conservative, were twisted and bent and left complete wrecks after the great conflagrations had been subdued.

What constitutes a fireproof building, in the general term as used today, is one the frame of which is safe against fire destruction under most any conceivable conditions, and one in which a fire originating within the building could not spread to other floors or parts of the building; or one in which a fire adjacent to the building could do no greater harm than to spoil or disfigure the exterior, and in extreme cases, the great heat from without, ruin the interior finish or contents, but leave the whole structure absolutely intact, the frame strong and in good condition. A building that would be fireproof in one location, might not be in another, as, for instance, a court house or public building in the middle of a square without surrounding structures to endanger it would be fireproof as long as it was made of non-combustible materials, and did not contain furniture or articles that would generate any great amount of heat in case of fire within the building; while in the interior of a crowded city the heat may be so intense from the burning of adjoining buildings as to cause exposed metal to become soft enough to twist or fall, and cast iron to melt or crack.

Thus a structure isolated from other structures may be considered safe against loss by fire where only a limited amount of precaution is taken on the part of the designer. It may have a considerable amount of wood finish in the interior, with wood frames on the exterior, and unless it contains a large amount of combustible materials we would hardly expect the building to be damaged to any great extent, nor a fire to spread with any degree of rapidity.

On the other hand a building in the crowded business district of a city must be so constructed that it will not only keep fire from spreading within the building, but must also keep out heat caused by the burning of buildings adjacent to it.

First of all the skeleton or frame must be thoroughly fireproof and all metal used in its construction be well protected.

Second.—The walls must be composed of non-combustible materials.

Third.—All exterior openings must have fireproof frames, and be fitted with shutters or wire gauze glass capable of resisting great heat without breaking or melting down. Interior partitions must be of the fire-proof type.

Thus the term is a relative one only, and the risk may be reduced to a minimum by good judgment on the part of the designer by eliminating all the wood possible in the interior, and by preventing the heat from the outside from entering as much as possible. It must be remembered, however, that the heat from without a building may be so intense as to ignite the contents even when the blaze does not enter.

There are in general only two types of fireproof buildings—the steel frame with all metal fireproofed with concrete or terra cotta, with floors of either concrete or tile, or the entire structure of reinforced concrete. The walls may, in either case, be designed to carry their own weight, or may be light curtain walls carried on the steel or reinforced concrete frame.

In either case, whether the building is to be of structural steel or of reinforced concrete, the designing work is relatively the same. There are certain stresses to be taken care of caused by the following external forces:

1.—The dead loads of the skeleton frame, the floors, partitions and walls.

2.—The snow load.

3.—The live loads, or loads which the floors are intended to carry.

4.—Miscellaneous loads, such as heavy machinery, elevators, water tanks and the like.

5.—Wind pressure.

The fact that most of us here are interested in concrete construction mainly, rather than steel, makes it advisable to discuss the subject from the standpoint of the reinforced concrete design, although the two materials are so closely related in building that in order to design a structure of one the other must be understood, for in many cases structural steel is far more practical for certain parts of a building, and should in such cases be used even though the building is in the main of reinforced concrete.

After the general arrangement of the building has been decided upon, the first step is to get the most economical arrangement of columns, beams, and girders. The length of span for floor slabs, the length of span for beams, the direction of beams, the depth allowable, and the general panel effect of the ceilings are all things to be considered. The beams should in general be arranged so the floor slabs will span from ten to sixteen feet for economy. A floor slab will usually be in thickness about 1/30 of the span, if reinforced in one direction only.

The floor slabs are figured to carry all the dead and live loads coming on the floors. The live load for office buildings need not, in most cases, be more than seventy pounds per square foot, where a good factor of safety is used, and will range from this up to over one thousand pounds per square foot for heavy warehouses or factory construction. The steel in floor slabs is placed in the bottom of the slab in the center of the span and raised to the top near the ends and over the support. Short bars are placed in the top frequently over the supports. The first is, in the writer's opinion, the most economical arrangement of steel and takes care of the stresses both over and between the supports.

After the slabs have been designed the beams may be figured. They must carry the weight of the slabs, their own weight, and the live load of the floors. The beams

*Read before the Oklahoma Cement Users and Contractors Association.

and girders must be figured to take care of both shear and flexure. Concrete in shear and flexure is good for fifty pounds per square inch in shear, and for flexure may be stressed up to 600 pounds to 800 pounds compression on the compression side of the member. The steel on the tension side may be stressed up to 20,000 pounds for high elastic limit steel, or 16,000 pounds per square inch for medium steel. For economy the bars should extend over the supports where possible to take advantage of the continuous beam action, which will reduce the amount of steel required about one-fourth.

The diagonal stresses must be taken care of by vertical stirrups and by bent-up bars or by girder frames having the diagonal shear members attached to the main bars.

The columns are in the first place designed to carry in direct compression the dead loads of the beams and slabs, the live loads of the floors, the snow, and miscellaneous loads. These loads are taken in full, except the live loads on the floors which are reduced from the top story down to five or ten per cent for each successive floor until about fifty per cent of the assumed live load has been reached, then no further reduction is made. Concrete in columns can be figured to carry safely 600 pounds per square inch, and the vertical reinforcement fifteen times this amount. The best practice is to use about one per cent of vertical reinforcement and a tie every twelve inches extending among the vertical bars, for ordinary buildings up to five and seven stories, but the hooped columns with hoops close enough to make the outside concrete act as a shell is better practice for a building of greater height. A column of this description may be stressed up to 1,000 pounds per square inch with safety when properly designed.

The foundation or footings for a building is perhaps the most important part of the structure. In the smaller sized buildings square footings under the columns will answer. They should be made thick enough to give ample material for shear so that the column will not punch through the footing, and then be reinforced both ways to take care of the flexure or bending.

Larger buildings are often set on caissons which go down to solid rock, and sometimes on concrete piles, which are fast replacing wood piles for this purpose.

In designing footings we must first determine the pressure that the soil is capable of sustaining, which will be from two to three tons per square foot for good clay, three to four tons for good sand, and one and a half to two for fine sand containing water. Quicksand can hardly be relied upon for a good foundation. Coarse gravel well cemented will carry much more than any of the above mentioned materials, and rock may be capable of sustaining as much as ten to fifteen tons per square foot. Soil, however, should always be tested to learn its bearing capacity before the foundations are designed.

The footings are usually designed to carry the same loads as the corresponding columns, that is, all the dead weight, and the reduced live load as explained before.

The wind pressure on buildings is something that is very often neglected by designers, especially where competitive designs are submitted for the building. In the steel frame building wind bracing is effected by putting in brackets where the beams connect onto the columns.

In the reinforced concrete skeleton frame, in buildings of ordinary height and moderate variation of length and breadth dimensions, wind pressure need hardly be considered. The fact that the concrete frame is monolithic, the floor slabs connected rigidly to the beams and reinforced in both directions with steel, the beams and columns in like manner being run together, the forces to overcome due to wind pressure are distributed through so many members that they are almost negligible.

Where the building is long and narrow, however, or of considerable length, wind pressure must be taken care of by brackets at the beam and column connections. The wind pressure also increases the compression and produces certain flexure in the columns which must be taken care of in the design.

The fireproofing of the steel in reinforced concrete construction is a matter of no small importance, but requires no special effort on the part of the designer or builder. Allowance is made in the design for about one and a half inches protection for the steel in the beams and columns and one inch in the floor slabs, and so long as the steel is placed in its proper position and kept there while the placing of concrete is going on there will be no danger of the reinforcing steel deteriorating with age or becoming injured during fire.

Good Business in Missouri.

ST. LOUIS, Mo., Dec. 16.—The Colorado Lime Co., the office of which is located in this city, has a plant at Spring Garden, Mo., where it operates two kilns and has the C. R. I. & P. Ry. for shipping facilities. This plant has been in operation three years. The company intends to double its capacity and increase the length of the railroad siding. An official says: "Our trade is steadily increasing and the outlook for next year is very good."

Will Make Lime in Virginia.

WINCHESTER, Va., Dec. 18.—The Standard Lime Co., of Martinsburg, W. Va., has just closed a deal with W. W. Atherton and M. L. Artz for a large tract of land underlaid with limestone, at Strasburg Junction, and will begin the erection of large lime kilns at once.

American Cement Co.'s New Property.

POUGHKEEPSIE, N. Y., Dec. 20.—The American Cement Co. has taken title to the Tower property, north of the Tower furnace. The company will erect a big warehouse on the property and will manufacture its own cement.

Encouraged by Trade Outlook.

HANNIBAL, Mo., Dec. 17.—The Star Lime Co. says the outlook for business is fair. It is operating four kilns and a rock crusher.

Gravel for Road Purposes.

At the meeting of the First American Congress of Road Builders held at Seattle, Wash., Austin B. Fletcher, M. Am. Soc. C. E., and secretary of the Massachusetts Highway Commission, read a paper on "Road Materials and Some Simple Rules for Testing Them." Under the discussion of gravel for road purposes, he said:

Gravel, unlike sand, loam and clay, is not a simple material. Indeed, it is usually a mixture of materials, small pebbles or stone fragments combined with either sand or clay. It is very widely distributed throughout the glaciated portion of the country. Professor N. S. Shaler has stated that it rarely occurs that gravel cannot be found within any area of ten miles square in the glaciated field.

But gravel suitable for road purposes is not so plentiful as the foregoing statement would indicate, since unless the pebbles are combined with the sand or with the clay in proper proportions, the gravel, without treatment, may be of little value.

Probably the best is what is called in some parts of New England "blue gravel." This material is in effect finely broken trap rock which has been subjected to little or no water action. The fragments are angular; the gravel contains little argillaceous matter, and when placed on the road and rolled the fragments lock together into a mass having relatively few voids and great stability. The deposits of this blue gravel are rare and the community with a bed of such material is to be congratulated. Its road problem is not a serious one.

As between the sandy gravels and the clayey, the choice should be usually in favor of the former unless the clay is in relatively small proportion. Too much clay makes a muddy road and one which is easily rutted by traffic. Too much sand, with large pebbles, makes a mass with little or no stability and no amount of rolling will compact it.

For the best results in general, considering the ordinary gravels, the writer believes that all stones which will not pass through a two and one-half inch mesh should be screened out; that at least 50 per cent, by weight, should consist of pebbles or fragments which will not pass through a one and one-quarter inch mesh; and that the remainder should consist of small fragments of pebbles and sand from less than one-half of an inch in diameter to an impalpable powder.

The writer admits that such a gravel is rarely found, but he offers it as an ideal to be approached as nearly as is possible, always bearing in mind the economics of the problem.

A gravel so graded, when properly rolled, has great stability in the road. If the pebbles in the gravels are from rocks of a crystalline or eruptive nature, as is usually the case in New England, a road built of such material will make but little mud under traffic and should not rut to any considerable extent even when the frost is coming out of the ground.

Illinois City Buys Gravel Stock.

STERLING, Ill., Dec. 18.—The city has made a satisfactory deal with the Great Western Gravel Co. of Spring Valley and has purchased the gravel that has been standing here on the "Q" tracks for the past two weeks. It will probably be used for repair work next spring.

Concrete Sand Found in Iowa.

BUFFALO CENTER, Ia., Dec. 17.—Good sand for concrete block and tile material as well as for all plastering purposes has at last been found in this locality. Samples of it have been tested at the Ames College and pronounced a fine sand for such work. Heretofore all the sand or gravel found has been in small pockets and mixed with a large amount of clay, but this new find has less than 3 per cent clay mixture. The owner of the "bed" is anxious to enter into some kind of a business arrangement with a competent concrete man, to erect a factory for manufacturing all kinds of cement products.

Clash Over Use of Gravel.

AURORA, Ill., Dec. 18.—The Chicago, Wheaton & Western railroad has been compelled to stop taking gravel from the Chicago & Northwestern railroad pits in the north end of Geneva, for the State street bridge grading and other work.

While an understanding was made at the time the bridge work was started in the spring, that the railroad would allow the Wheeler Construction Co. to use all the gravel needed in the bridge work, the agreement, it is now reported, did not include its use by the Chicago, Wheaton & Western railroad for filler or for grading for completion of the bridge.

The new railroad, therefore, has been compelled to seek gravel elsewhere the past week, and is now buying at the rate of twenty cents per team load.

The Milwaukee Concrete Mixer Machinery Co., with a capital stock of \$25,000, has been incorporated at Milwaukee, Wis., by W. J. Roseberry, R. J. Schwab and Henry E. Schwab.

The Hayden Concrete Co., of Hayden, Colo., has been incorporated for \$20,000 by David Flitner, Byrus T. Shelton and John E. Miles.

The Allentown Portland Cement Co., which is erecting a plant at Evansville, Berks county, Pa., with a capacity of 3,000 barrels a day, expects to have it finished so that operations may begin on New Year's day.



"Kellastone" Used in England.

After an absence of two months, spent in Europe, Edward F. Kellie, president of the Sanitary Construction & Manufacturing Co., returned recently to Terre Haute, Indiana, where the large factory and plant of "Kellastone" is located. While in England he organized a £1,000,000 company to handle "Kellastone."

Mr. Kellie, the inventor of this new building material, is a prominent citizen of Indiana and a resident of Terre Haute. Several years ago he began experimenting and investigating, both in this country and abroad, with various building materials. He discovered a process by which an artificial stone may be made, that in five hours becomes a homogeneous mass, absolutely impervious to water. It is put on like plaster, being similar in composition, except that lime is not used in its manufacture. When the ingredients are mixed, they are subjected to a heat of 280 degrees. This is sufficient to burn and bond the material so thoroughly that, at the end of five hours, it is absolutely dry—and remains dry always.

Exhaustive tests were made of this material at the laboratory of Purdue University, Lafayette, Ind. It is said that the crushing strength of the material is over 6,000 pounds to the square inch, and the fire test showed the heat resisting qualities so great as to make it absolutely fireproof.

One peculiarity of Kellastone is its light weight. In building a roof of this material no roofing is required to keep out rain or dampness, as it is absolutely waterproof, so that, considering its lightness, it makes an ideal material for roof construction. Roofs of this material constructed on metal foundations, are guaranteed for fifteen years.

Kellastone can be made in twenty-six different colors. A great variety of color schemes consequently can be worked out on exterior and interior of houses. These colors are guaranteed to be permanent. Kellastone, in its natural color, is pure white and resembles marble. When this material is applied to a smooth wooden surface it adheres so strongly that it is impossible to separate it from the wood. It is sufficiently elastic so that it may be put on a wooden floor, or upon steps, and the spring of the wood does not cause it to crack. It may be applied to wooden or metal laths. There is no part of a building, whether it be inside or out, floor or ceiling, porch or steps, columns or railings, in which Kellastone can not be used with the utmost satisfaction.

Kellastone has been used with a most artistic effect upon a handsome residence in Terre Haute, where Mr. Kintz is using it upon his home on South Seventh street, and it has caused much favorable comment.

From the hearty reception Mr. Kellie was given in Europe and the encouragement he received in London in the formation of a mammoth concern for the manufacture of this new building material, it seems that the field of activity of this infant industry will not be confined to America.

Business Opportunities.

Names and addresses of the parties making the following inquiries may be obtained by writing to the U. S. Bureau of Manufactures, Washington, D. C., and giving the file number attached:

The Bureau of Manufactures is in receipt of a communication from an American firm of freight brokers and forwarding agents, requesting catalogues and price list of concrete block making machinery for parties in South America.—4276.

A report has been received from an American consul in a Latin-American country stating that the superintendent of the public schools in his district, who is also erecting a number of new schoolhouses, is in the market for metal ceilings and iron girders. He is anxious to receive description and prices as soon as possible. Shortly after January 1 he is to begin the erection of a new government palace, when he will be in the market for a large quantity of building material.—4258.

Consul Maxwell Blake, of Dunfermline, suggests that makers of improved machinery and the various kinds of associated tools used in connection with road construction and repairs, such, for example, as rollers, auxiliary water carts, scarifiers and surface-destroying appliances, should not neglect the British market at the present time, as a very great demand is expected as a consequence of the decision of the present government to inaugurate a roads department which

will administer a fund on projected highway improvements of about \$3,000,000 during the first year of its existence. These expenditures will also inure to the benefit in a lesser degree of makers of stone and slag crushing machines, spade, pick and shovel firms, and others who manufacture the various kinds of tools required by road builders.

The Ash Grove Lime & Portland Cement Co., Kansas City, Mo., is sending out to the trade a booklet dealing with the use of hydrated lime in concrete mixtures. This booklet contains a number of authoritative laboratory tests, and will be read with interest by all parties interested in concrete construction. Every concrete contractor should thoroughly investigate the use of hydrated lime. The Ash Grove Co. in this pamphlet gives quite an exposition of the subject, and incidentally claims that its Snowflake hydrated lime, made by the Clyde process, shows the highest degree of perfection. The booklet is artistically gotten up, in different colors, and well illustrated, well written and clearly expressed. It should be appreciated.

The H. B. Sackett Screen & Chute Co., Chicago, designers and manufacturers of mine, ore and industrial cars, portable railways, turntables, switches, contractors' cars and buckets, etc., has recently issued its new catalogue No. 31. In presenting this the company states that it endeavored to convey a comprehensive idea of its products. The designs illustrated are the result of twelve years' experience in building industrial cars, buckets, elevators and screens for all conditions of service. The company is prepared to build special cars, etc., for special purposes, either from customers' plans or from designs of its own. Its facilities for work of this character are of the best, and, being located where material can be purchased at the minimum and shipments made promptly, the company is able to quote low prices. The catalogue covers all these topics thoroughly, giving the whys and wherefores. It is well and profusely illustrated and contains valuable information on the subjects treated of.

During the last decade, owing to the great necessity of economical production in industrial plants, it has become imperative for the producer to look towards a more efficient and economical manner of transporting both the raw and finished material about his plant. As almost all industrial plants are now using electric power, in some form or other, it is to this source that the producer naturally looks for a solution of his problems. The Atlas Car & Manufacturing Co., Cleveland, Ohio, in bulletin No. 1090 discusses the advantages of electrical appliances as conducted in industrial plants. The electric locomotive, with all appurtenances pertaining thereto, is fully described and its good points clearly shown. This bulletin is worthy of careful perusal, as the information conveyed is valuable. It is profusely illustrated and will undoubtedly be of benefit to the trade.

We illustrate herewith a specially made concrete mixer, which a leading manufacturer of concrete machinery recently shipped to the Brazilian government. This mixer is on tracks and equipped with an electric motor of 20 horsepower, 440 volts, for direct current, which the Brazilian government will obtain by connecting with street railway wires at any point where the machine is to be used. Since this mixer was shipped re-orders have been received, not only for the South American trade, but also for Australia and other points, as well.

The Cement Machinery Co., of Jackson, Mich., the advertisement of which appears in this journal, is the exclusive manufacturer of the Systematic concrete mixers, which, they state, have been adopted by the leading cities of the United States, and which will be exhibited at spaces 181-182 at the coming Chicago cement show, February 18-26.

This company also manufactures an exclusive line of mechanical tamped cement brick machines, of four different sizes, and the very latest, easiest and best block machine, face down and all other styles, they claim, that money can buy. These machines are manufactured under this company's patents and they, being established since 1900, have a reputation for a complete line of everything in concrete machinery that is practical and substantial and strictly up-to-date in every detail, at reasonable prices. Their 1910 catalogue on their Systematic Concrete Mixer, as well as other machines, is now out. They will be pleased to send this catalogue to anyone making inquiry.

Carrollton (Ill.) laid five miles of granitoid walks last summer and the municipal treasury already is equipped with funds to lay four more miles next summer.

New Books For the Trade.

We wish to call special attention to a number of new books that have been recently added to our list. These works are the latest authority on the various subjects treated and can be relied upon implicitly. They are written and compiled by such well known authors as Edward R. Maurer, B. C. E., Prof. of Mechanics, University of Wisconsin; Austin T. Byrne and Alfred E. Phillips, C. E., Ph.D., Prof. of Civil Engineering, Armour Institute of Technology; Walter Loring Webb, C. E., and Herbert Gibson, C. E., Edward Nichols, etc., etc.

"Highway Construction," by Austin T. Byrne and Alfred E. Phillips, is a practical guide to modern methods of road building and the development of better ways of communication. Special stress is laid in this treatise on the practical side of each subject, as distinguished from mere theoretical or academic discussion.

In seriatim is taken up the construction of "Country Roads," "City Streets," "Stone Block Pavements," "Brick and Wood Pavements," and "Asphalt Pavements, Foot Paths, Curbs and Gutters." Each one of these subjects is treated separately and exhaustively, and in the simplest language. They are based on a most careful study of practical needs and up-to-date methods as developed under the conditions of actual practice in the field.

"Reinforced Concrete," by Walter Loring Webb and W. Hubert Gibson. This is a treatise on cement, concrete and concrete steel and their application to modern structural work. An invaluable work for every contractor, builder and architect, civil and sanitary engineers. It may well be called a manual of practical methods. The following points are covered carefully and completely: "Cement and Cement Testing," "Mixing and Measuring Concrete," "Depositing and Finishing Concrete," "General Theory of Flexure in Reinforced Concrete," "Structural Application." This book is worthy of careful perusal. It is exceedingly instructive.

"Strength of Materials," by Edward R. Maurer. A practical manual of scientific methods of locating and determining stresses and calculating the required strength and dimension of building materials. This work is a boon to architects, builders, steel and concrete workers. It enables one to avoid mistakes. Briefly summarized, it treats of "Simple Stress," "Reaction of Supports," "Strength of Beams," "Strength of Columns," and "Strength of Shafts, Riveted Joints, etc." A simple exposition of facts are given clearly and forcibly. No difficult technical explanations are made, but the utmost care has been used to bring the treatment of each subject within the range of the common understanding. It is written so that it will appeal not only to the trained expert but also to the beginner and the self taught practical man who works to keep abreast of modern progress.

U. S. Buys Cyclone Drills.

John L. Munn, the Chicago representative of the Cyclone Drill Co., Orrville, Ohio, is acting very chesty



SYSTEMATIC CONCRETE MIXER EQUIPPED WITH MOTOR.

these days, and with good reason, as the demand for the company's apparatus is on the increase. Among the orders recently booked are the following:

Panama Canal Commission—Six No. O drills.
Rio Tinto Mining Co., London, Eng.—Six No. O drills for company's mines in Spain, making twelve for this company.

Walsh Construction Co., Davenport, Iowa—Two No. O drills.

Caspary Stone Co., Columbus, Ohio—Three No. 14 drills.

DECEMBER 22, 1909.

ROCK PRODUCTS

53

U. S. Crushed Stone Co., Chicago—One No. 14 electric blast hole drill.

Valley Development Co., Chicago—One No. 14 gasoline drill.

S. B. Martin & Co., Fiborn Quarry, Mich.—One No. 12 gasoline traction blast hole drill.

Yale & Reagan, Chicago—One No. 10 steam blast hole drill.

Marblehead Lime Co., Chicago—One No. 10 steam blast hole drill.

The Ohio Steam Shovel Co., formerly of Toledo, O., has been purchased by Cincinnati capitalists and the entire plant, including all patterns, drawings, material, etc., has been removed to Cincinnati, O. All inquiries, orders for repair parts, etc., for Ohio steam shovels should hereafter be addressed to the Ohio Steam Shovel & Dredge Co., Cincinnati, Ohio.

A new catalogue is in the course of preparation and requests for same should be sent in at once. The company is prepared to make immediate delivery of its 30-ton steam shovel, mounted on either traction

CLASSIFIED ADVERTISEMENTS

Advertisements will be inserted in this section at the following rates:

For one insertion 25 cents a line
For two insertions 45 cents a line
For three insertions 60 cents a line

Eight words of ordinary length make one line.
Heading counts as two lines.

No display except the headings can be admitted.

Remittances should accompany the order. No extra charges for copies of paper containing the advertisement.

EMPLOYEES WANTED

WANTED.

If you are in need of or wish to sell anything which comes under any of these classifications, write us. If you have something not coming under these classifications we will create one for you.

MARCH 1ST, 1910.

Wanted—Outside superintendent for lime kilns and quarry. Must have experience and be capable of handling 100 men. Give references and salary wanted.
Address "B," care ROCK PRODUCTS.

SALES ENGINEER.

Wanted—By a concern manufacturing high-grade steel exclusively, in castings and forgings, field extension work and attending long established business lines. Position requires the initiative of an energetic, able, educated man of experience. Excellent opening for right man. Only those who give nationality, age, education, experience, references and salary expected will be considered.
Address "A. 25," ROCK PRODUCTS, Chicago, Ill.

SUPERINTENDENT WANTED

for lime plant. Must be competent. References required.
Address EAGLE LIME PRODUCTS CO.,
Pereles Bldg., Milwaukee, Wis.

EXPERIENCED SALESMAN.

Wanted, two first-class, experienced, traveling Portland cement salesmen for territory west of the Mississippi river. No beginners or parties handling other lines need apply. Give references; also salary expected.
Address 727, care ROCK PRODUCTS.

ENGINEER WANTED.

A graduate mechanical or civil engineer with at least five years experience in operating, to take charge of an 800-ton rock crushing plant in California. Applicant must have both mechanical and executive ability. State fully past experience, salary expected.
Answer to
BOX 738, care ROCK PRODUCTS.

EXPERIENCED MAN

Wanted in handling rotary kilns and gas producers. Permanent position for right party as foreman of plant. Reference required. Address
BOX 323, Danbury, Conn.

SUPERINTENDENT

wanted for lime burning or stone crushing plant. Am familiar with every detail of each.
Best of references.
Address
BOX 743, ROCK PRODUCTS.

SALESMAN WANTED.

An experienced wall plaster salesman for Eastern Pennsylvania and New Jersey. An excellent opportunity for a competent man acquainted with the market in this territory. No others need apply.
Address
BOX 744, care ROCK PRODUCTS.

EXPERIENCED MAN WANTED.

One to operate crusher and fine grinding machinery—artificial slate products—one who can invest a reasonable amount and take full charge of plant.
Address
729, care ROCK PRODUCTS.

wheels or on standard gauge railway trucks, also of its 45-50 ton boom pattern, 3 engine, 54" horizontal boiler Ohio shovel, and advises that it can deliver its 70-ton boom machine in 30 days. It requests correspondence with prospective steam shovel purchasers on either 30, 50 or 70-ton steam shovels, or on dipper dredges, of which it also makes a specialty.

The business is being handled by F. A. Peckham and H. L. Hoeffer, both of Cincinnati, and P. B. Warner, 916-17 Pennsylvania building, Philadelphia, Pa. Earle J. Banta, M. E., who has been mechanical engineer of the Panama canal for several years, is chief engineer of this company and in full charge of the designing and shop production department.

First Vitrified Brick in Oakland.

OAKLAND, CAL., Dec. 18.—The first vitrified brick to be placed on the streets of this city is being used by the Oakland Traction Co. on its tracks on Piedmont avenue. The rails are being flanked with the

MANAGER WANTED.

An experienced man with some capital to take management of cement brick plant already built. Located in one of the most thriving cities in New York state. Chance of a lifetime for the right man. Full particulars to anyone meaning business. Address

SAND-CEMENT BRICK COMPANY,
Glens Falls, N. Y.

EMPLOYMENT WANTED

SAND AND GRAVEL FOREMAN.

Position wanted by experienced sand and gravel washer; foreman. Address 730, care ROCK PRODUCTS.

POSITION IN SALES DEPARTMENT

wanted by a cement man of ten years' experience as sales manager and road man, in both eastern and western territory. Best of references.

Address B. 741, care ROCK PRODUCTS.

POSITION WANTED

by experienced crusher and quarry superintendent. Thorough mechanic. Can handle large plant. Have had steam shovel and locomotive experience. References. Open January 1. Address B. 742, ROCK PRODUCTS.

SITUATION WANTED BY COMPETENT MAN
to fill any position in connection with the cement, plaster and lime business. Will be open for engagement after first of the year. Can give highest reference. Correspondence solicited. Address
BOX 207, East End, Pittsburgh, Pa.

TRAVELING SALESMAN.

Position wanted by an experienced traveling salesman, wall plaster or Portland cement. First class references.

Address 736, care ROCK PRODUCTS.

MACHINERY FOR SALE

ENGINES AND BOILERS FOR SALE.

Engines—Corliss, Automatic and Throttling, all sizes from 1 to 500 H. P.
Boilers—Horizontal, Portable and Vertical, all sizes from 1 to 200 H. P.
Pumps, Heaters, Tanks, Sawmill and General Machinery.

Write for our prices on your requirements.

THE RANDLE MACHINE CO.,
1745 Powers St., Cincinnati, O.

CRUSHER FOR SALE.

Gates No. 4 Gyra, in fine condition. Cheap.
R. P., BOX 2, Sta. A., Cincinnati, O.

Marsh's Crusher List

I No. 8 Gates Plant complete.

1 No. 7½ Gates Plant complete.

1 No. 7½ Austin Crusher only.

1 No. 6 Gates Crusher only.

1 No. 5 Austin Crusher only.

1 No. 5 Gates Crusher only.

2 No. 3 Gates Crushers.

1 No. 4 Gates Crusher.

1 17x24 Buchanan Jaw Crusher,
made by Geo. V. Cresson & Co., Philadelphia.

We also have a lot of crushers of various makes at a great bargain.

All of the above crushers are absolutely first-class.

In addition, we have for sale:

2 75-Ton Steam Shovels, almost new,
equipped with 3½ yd. dippers and built especially for loading stone.

MARSH COMPANY, 903 Old Colony Building, Chicago.

new brick from Broadway out to the city line. The use of the material will greatly improve the street, because of the fact that the vibration from the car rails will be stopped from cracking the asphalt of the street and causing the breaking of the pavement.

Chicago Men Inspect Indiana Plant.

BRAZIL, IND., Dec. 17.—A party of Chicago capitalists arrived in Brazil recently and went to Carbon to look over the clay plant there with a view of buying it. The plant has been closed down for some time, and the owners are anxious to dispose of it. It is believed that a deal will be closed with the Chicago people when the plant will be repaired and put in operation.

The Robinson Construction Co., of Rock Island, has the contract for the Industry (Ill.) township high school and the new Christian church at Ma-

SAND-LIME MACHINERY BARGAINS.

2—50 ft. x 6 ft. hardening cylinders, like new, 150 lbs. pressure.
One traveling crane and 36 sand lime cars for same.
One No. 1 Sturtivant lime crusher.
One 12 mold "A" Saginaw press.
One 125 H. P. boiler.
Turn tables, trackage and other accessories.
Located in South. Price made f. o. b. cars.
Inspection invited.
Address

J. G. B., care ROCK PRODUCTS.

A GREAT BARGAIN.

For Sale—Two Williams pulverizers, shafting, pulleys and belting, at a great bargain to close out our cement plant.
KY. & IND. CEMENT CO.,
Jeffersonville, Ind.

GRAVEL EXCAVATORS.

We make a specialty of Sand and Gravel Excavating Plants, both New and Second Hand, either with Drag-line bucket, Clamshell or Orange Peel. We furnish necessary equipment or will install complete—as desired. Confer with us.

WILLIS SHAW MACHINERY CO.,
171 La Salle St., Chicago, Ill.

HOW ABOUT THESE?

Gates No. 6 Style "D" Crusher, rear drive. (2)
Gates No. 5 Style "D" Crusher, rear drive, together with 36' Elevator Screen and Dust Jacket.
Gates No. 3 Style "D" Crusher, rear drive.
Mundy 7½" x 10" with boiler and boom swinger.
Lidgerwood 7x10 D. C. D. with boiler.
American 6½" x 10" D. C. D. with boiler (2).
Byers 6" x 7" with boiler (both friction and links).
Smith No. 2½ Mixer, mounted, with engine and boiler.
Koehring No. 2 Mixer, mounted, with engine and boiler.
Smith No. 2 Mixer, mounted, with engine and boiler.
Knowles Pump, Duplex, 16" x 10½" x 12".
Laidlaw-Dunn-Gordon Duplex Compound, 14x20x10x18.
32-ton standard gauge 4-wheel Switcher and Tender.
Norwalk compound Compressor; 960' to 100 lbs.
We have Steam Shovels, Dinkies, Cars, Rock Drills, Road Rollers, Clams and Orange Peels, etc.
Send us your printed stock sheet and price list.
Address WILLIS SHAW MACHINERY CO.,
171 La Salle St., Chicago, Ill.

BUSINESS OPPORTUNITIES

CONCRETE MANUFACTURING PLANT

located in growing Nebraska city, 8,000. Good shipping territory of 50 miles or more. Plentiful sand supply, cement cheap, substantial factory building on railroad, heated with hot water, fully equipped with block machines, mixers, special molds, tools, etc., together with good residence. Now running and doing profitable business. Partners with the capital to take care of the trade offered can make fine returns. Owner is removing his investments into railroad properties. Write quick, for this snap will not last long.

Address 739, care ROCK PRODUCTS.

PLASTER MILL

for sale. One-half interest or entire property of a fine plaster mill, complete with abundance of pure gypsum. Price cheap and terms reasonable.

Address 740, care ROCK PRODUCTS.

WANTED TO DEVELOP

deposits of gypsum, sand lime. Would manufacture articles used in general construction. What ideas, or deposits, have you?

Address "G," care ROCK PRODUCTS.

MATERIAL FOR SALE

GYPSUM ROCK FOR SALE.

Eight feet of gypsum rock; analysis 94 to 96.7; one mile from four railroads. Call and see the cores.

Address M. J. SKIVINGTON, Munford, N. Y.

BURIAL VAULT MOLD

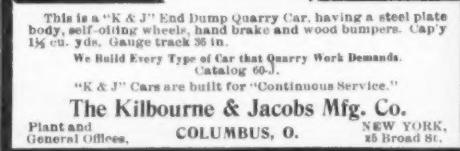
for sale. One Indiana burial vault mold. New. Cheap. ABBEY-DODGE-BROOKS CONCRETE CO.,
2 Passaic St., Newark, N. J.

An advertisement for The Henry Martin Machine Mfg. Co. The top half features the company name in large, bold, serif capital letters. Below it, "LANCASTER, PENNA." is written in a smaller, all-caps font. A horizontal line separates this from the product list. The products are listed in three columns: "ROCK CRUSHING MACHINERY", "BRICK-MAKING MACHINERY", and "CLAY WORKING APPLIANCES". Another horizontal line follows. The next three items are stacked vertically: "CEMENT BRICK MACHINERY", "SAND GRINDING MACHINERY", and "SAND DRYERS, BRICK DRYERS, ETC.". A horizontal line at the bottom separates this from the call to action. The bottom text, "SEND FOR PLANS AND ILLUSTRATED CATALOGUE", is in a bold, sans-serif font. To the right of the text, there is a detailed illustration of a large industrial machine, likely a brick-making or sand-drying apparatus, showing various mechanical parts like belts, pulleys, and a hopper.



SEND FOR PLANS AND ILLUSTRATED CATALOGUE

The advertisement features a central black and white photograph of a vintage dump truck. Above the truck, the text "K & J CARS" is displayed in a bold, sans-serif font. Below the truck, another "K & J CARS" sign is visible. On the left side of the image, a large diagonal banner reads "FOR QUARRIES". On the right side, another diagonal banner reads "FOR QUARRIES". At the bottom center, a prominent rectangular box contains the text "K & J" in a large, bold, serif font.



This is a "K & J" End Dump Quarry Car, having a steel plate body, self-oiling wheels, hand brake and wood bumpers. Capacity 1½ cu. yds. Gauge track 36 in.

"K & L" Cars are built for "Continuous Service."

"K & J" Cars are built for "Continuous Service."
The Kilbourne & Jacobs Mfg. Co.
Plant and General Offices, COLUMBUS, O. NEW YORK
25 Broad St.

**IMPORTANT
Advertisers—Take Notice**

Changes of Copy

Must be in this office by the Fifteenth of the month, if proofs are desired; if no proofs are required the desired changes can be made if copy is received by noon of the Nineteenth.

New Advertisements

To insure proper classification, should be in this office by the Fifteenth of the month, but they can be inserted in the last form going to press if received by the Nineteenth. The punctual publication of the paper admits no deviation from these rules. Advertisers are earnestly requested to co-operate with us.

THE FRANCIS PUBLISHING COMPANY
355 Dearborn Street, Chicago, Ill.

Fast Trains Day and Night

MONON ROUTE

**EXCELLENT SERVICE
BETWEEN**

**Chicago
La Fayette
Indianapolis
Cincinnati
Dayton
West Baden and
French Lick Springs
Louisville**

Electric Lighted Standard Sleepers on Night Trains, Parlor and Dining Cars on Day Trains

**Frank J. Reed, G.P.A. E. P. Cockrell, A.G.P.
CHICAGO**



Leviathan Belting

MAIN BELTING COMPANY,

Philadelphia

New York

Boston

Buffalo

Pittsburg

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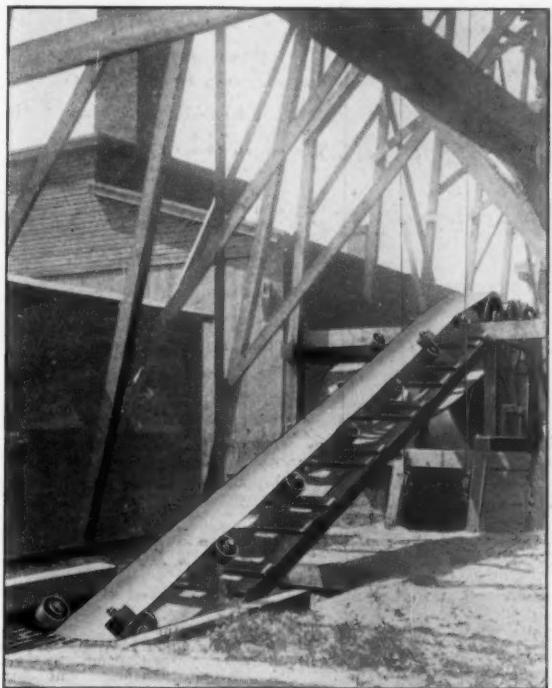
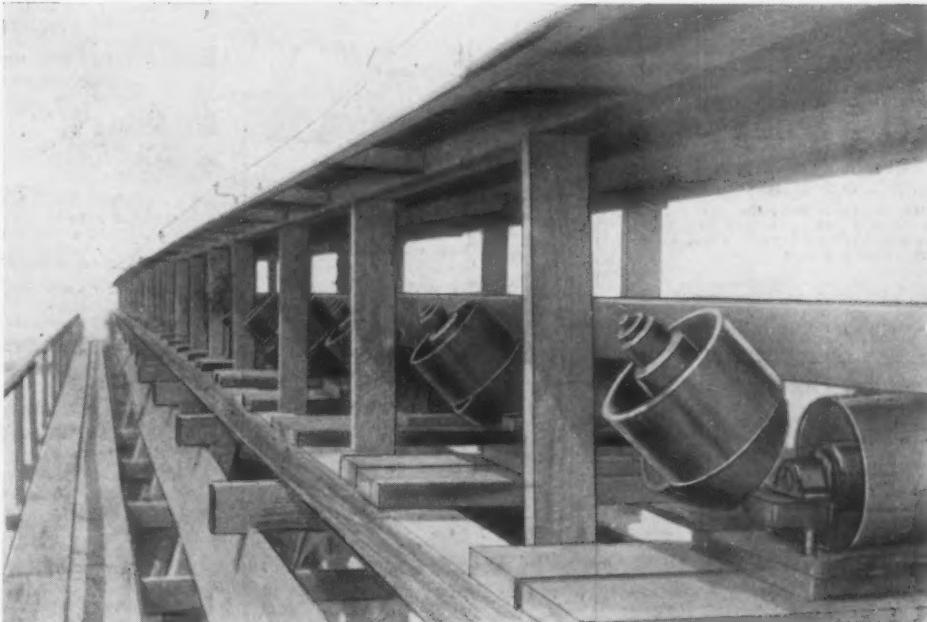
SAWYER BELTING COMPANY

MANUFACTURERS OF

Improved Stitched Canvas Belting

For Conveying Crushed Stone, Sand, Brick, Cement, Clay, Coal, Ores and Mixed Concrete, Etc., also for Heavy Transmission.

These "cuts" show part of an installation placed in operation in 1898 at the plant of the Long Island Sand Company, Port Washington, Long Island, N.Y. The method of handling is to load the sand and shale on a belt at the hillside, this belt delivering to the crushers which in turn deliver it to an inclined belt shown in the smaller cut, this latter belt carrying the product to the screen house where the sand is meshed according to size, and in turn passing to the long belt running out on the pier at the end of which the material is loaded onto barges and lighters.



A brief history of this installation shows that it was placed in 1898, and was in continuous operation until the winter of 1904-5, when the pier was blown down by a severe storm and the belt laid in salt water several weeks before recovery. When examined, the belt was found to be uninjured, and after the erection of the new pier was placed on the conveyor rolls as being practically as good as new.

We produce a letter from this customer as follows:

PORT WASHINGTON, L. I., July 5, 1904.

SAWYER BELTING CO.,

Gentlemen:—Replying to yours of 2nd inst., would say we are using Sawyer Belting throughout our plant, in widths from 3 to 24 inches. Five years ago we put in 2600 ft. of 24 in. 6-ply Sawyer Belt for conveyors, and it has given us perfect satisfaction. Some of the first belts bought are still in use and in good shape. I consider your belt superior to all others for Driving and Conveying. Very truly yours,

LONG ISLAND SAND CO.

P. C. WOODNUT, Supt.

Also at the occasion of our visit this year, we were informed by their Assistant Superintendent that the belts were still pliable and unscarred and no doubt were good for many years of service.

We have other propositions where Sawyer Conveyor Belts have given equally efficient service.

ESTIMATES FURNISHED. Address, ENGINEERING DEPARTMENT

SAWYER BELTING CO., Cleveland, Ohio

Tell 'em you saw it in ROCK PRODUCTS

BAGS.
Urschel Bates Valve Bag Co.
West Jersey Bag Co., The.

BAG PATCHER—CEMENT.
Little Co., C. H.

BALL MILLS.
Alsing, J. R., Eng. Co.
Power & Mining Mch. Co.

BELTING.
Chicago Belting Co.
Gandy Belting Co.
Main Belting Co.
Sawyer Belting Co.

BRICK.
Harbison-Walker Refractories Co.

BUCKETS, DUMPING AND GRAB.
Atlas Car & Mfg. Co.

BUILDERS' SUPPLIES.
Springfield Coal & Ice Co.
Wisconsin Lime & Cement Co.

BURR STONES.
Charles, J. M.

CEMENT BRICK MCHY.
Bartlett, C. O., & Snow Co.
Martin-Henry Brick Machine Mfg. Co.
Oklahoma & Texas Cement Brick Co.
Peerless Brick Machine Co.

CEMENT HYDRAULIC.
Carolina Portland Cement Co.
Fowler & Pay.

CEMENT MCHY.
Alsing, J. R., Eng. Co.
Cummer, F. D., & Son Co.
Kent Mill Co.
Power & Mining Mch. Co.
Ruggles-Coles Eng. Co.

CEMENT, PORTLAND.

American Cement Co.
Alma Portland Cement Co.
Alpha Portland Cement Co.
Atlas Portland Cement Co.
Carolina Portland Cement Co.
Chicago Portland Cement Co.
De Smet, Geo. W.
Dixie Portland Cement Co.
Edison Portland Cement Co.
French, Samuel H., & Co.
Hartranft, Wm. G., Cement Co.
Ironton Portland Cement Co.
Kosmos Portland Cement Co.
Lehigh Portland Cement Co.
Marquette Cement Mfg. Co.
Meacham & Wright Co.
Maryland Portland Cement Co.
Northwestern States Portland Cement Co.
Oklahoma Port. Cement Co.
Phoenix Cement Co.
Penn Allen Portland Cement Co.
Pennsylvania Cement Co.
Peninsular Portland Cement Co.
Sandusky Portland Cement Co.
Security Cement & Lime Co.
Superior Portland Cement Co.
Universal Portland Cement Co.
United Kansas Portland Cement Co.
Warner, Chas., Co.
Western Lime & Cement Co.
Wisconsin Lime & Cement Co.
Wolverine Portland Cement Co.

CLAY PRODUCTS.
Buckeye Fire-Clay Co.
Western Lime & Cement Co.

CLAYWORKING MCHY.
American Clay Working Mch. Co.
Bartlett, C. O., & Snow Co.
Cummer, F. D., & Son Co.

CLASSIFIED BUSINESS DIRECTORY

CONCRETE BLOCK MCHY.

Anchor Concrete Stone Co.
Century Cement Mch. Co.
Concrete Stone & Sand Co.
Perfection Block Mch. Co.
Pettyjohn, The, Co.
Simpson Cement Mold Co.
Oklahoma & Texas Cement Brick Co.

CONCRETE MIXERS.

Cement Machinery Co.
Cement Tile Mch. Co.
Kent Mach. Co.
Marsh Co., G. C.

CONCRETE BEADS.

Carolina Portland Cement Co.
COLORINGS, BRICK AND MORTAR.
Chattanooga Paint Co.
Clinton Metallic Paint Co.
Ricketson Mineral Paint Works.
Williams, C. K., & Co.

CONCRETE REINFORCEMENTS.

American Steel & Wire Co.
Broomell, A. P.

CONVEYORS.

Austin Mfg. Co.
Bartlett, C. O., & Snow Co.
Caldwell, H. W., & Sons Co.
Ersham, J. B., & Sons Mfg. Co.
Power & Mining Mch. Co.

CRUSHERS.

Alsing, J. R., Eng. Co.
Austin Mfg. Co.
Bacon, Earl C.
Bartlett, C. O., & Snow Co.
Butterworth & Lowe.
Chrome Steel Wks.
Ersham, J. B., & Sons Mfg. Co.
Eureka Stone & Ore Crusher Co.
Kent Mill Co.
Marsh Co., G. C.
Martin, Henry.
McDonnell Boiler & Iron Works.
Power & Mining Mch. Co.
T. L. Smith & Co.
Sturtevant Mill Co.
Taylor Iron & Steel Co.
Williams Pat. Crusher & Pulverizer Co.

CUT GEARS.

Nuttall, R. D., Co.
DRAINAGE FITTINGS.

Wade Iron Sanitary Mfg. Co.

DRILLS.

American Well Works, The.
Keystone Traction Drill Co.
Howell Mining Drill Co.

DRYERS.

Alsing, J. R., Eng. Co.
American Process Co.
Bartlett, C. O., & Snow Co.
Cummer, F. D., & Son Co.
Ruggles-Coles Eng. Co.

DRYER CARS.

Ernst Wiener Co.
Power Mining & Mch. Co.

ATLAS CAR & MFG. CO.
AUSTIN MFG. CO.
CONTINENTAL CAR & EQUIP. CO.
KILBURN & JACOBS MFG. CO.
POWER & MINING MCH. CO.
SACKETT SCREEN & CHUTE CO., H. B.
ERNST WIENER CO.

DYNALITE, DYNAMITE AND POWDER.

American Dynalite Company.
Aetna Powder Co.
DuPont Powder Co.
Independent Powder Co.

DUMP CARS.

Atlas Car & Mfg. Co.
Austin Mfg. Co.
Continental Car & Equip. Co.
Kilbourne & Jacobs Mfg. Co.
Power & Mining Mch. Co.
Sackett Screen & Chute Co., H. B.
Ernst Wiener Co.

PERFORATED METALS.

ENGINEERS.

Bacon, Earl C.
J. C. Buckbee Co.
Fuller Eng. Co.
Schatzola, Ernest.
Spackman, Henry, Eng. Co.

EXPANSION BOLTS.

Farrington, H.

FIBRE MCHY.

Ohio Fibre Mch. Co.
Shuart-Fuller Mfg. Co.

FIRE BRICK.

Ashland Fire Brick Co.
Buckeye Fire-Clay Co.
Carolina Portland Cement Co.
Harbison-Walker Refractories Co.
Louisville Fire Brick Co.
Union Mining Co.

GAS AND GASOLINE ENGINES.

Power & Mining Mch. Co.

GAS PRODUCERS.

Duff's Patents Co.
Power & Mining Mch. Co.

GYPSUM.

Carolina Portland Cement Co.
Iowa Hard Plaster Co.
King, J. B., & Co.
Plymouth Gypsum Co.
Niagara Gypsum Co.
U. S. Gypsum Co.

GYPSUM MCHY.

Butterworth & Lowe.
Cummer, F. D., & Son Co.
Ersham, J. B., & Sons Mfg. Co.
McDonnell Boiler & Iron Works.

HARDENING CYLINDERS.

Alsing, J. R., Eng. Co.
American Clay Machinery Co.

HYDRATING CYLINDERS.

Alsing, J. R., Eng. Co.
Clyde Iron Works.
Kritzer, The, Co.
National Mortar & Supply Co.

HYDRATING MCHY.

Clyde Iron Works.
Kritzer Co., The.

IRON COLUMNS.

Mostberger-Langner Iron Co.

LIME.

Carolina P. C. Co.
Farman Cheshire Lime Co.
Fowler & Pay.
Ohio & Western Lime Co., The.
Kelly Island Lime & Trans. Co.
Marblehead Lime Co.
Mitchell Lime Co.
National Lime & Stone Co.
National Mortar & Supply Co.
New Jersey Lime Co.
Pierce City Lime Co.
The Scioto Lime & Stone Co.
Western Lime & Cement Co.
Wisconsin Lime & Cement Co.

LIME, HYDRATED.

Kelley Island Lime & Transport Co.
Ohio & Western Lime Co., The.
Marblehead Lime Co.
New Jersey Lime Co.
National Lime & Stone Co.
National Mortar & Supply Co.
The Scioto Lime & Stone Co.
Warren, Chas., Company.
Western Lime & Cement Co.

LOCOMOTIVES.

Davenport Locomotive Wks.

Ernst Wiener Co.

METAL LATH.

Carolina Portland Cement Co.

PERFORATED METALS.

Johnson & Chapman Co.

PNEUMATIC TOOLS.

Howell Mining Drill Co.

PLASTER MCHY.

Butterworth & Lowe.
Cummer, F. D., & Son Co.
Dunning, W. D.
Ersham, J. B., & Sons Mfg. Co.
Williams Pat. Crusher & Pulverizer Co.

PLASTER.

Carolina Portland Cement Co.
Iowa Hard Plaster Co.
King, J. B., & Co.
National Mortar & Supply Co.
Plymouth Gypsum Co., The.
Sackett Plaster Board Co.
U. S. Gypsum Co.

PULVERIZERS.

American Pulverizer Co.
Alsing, J. R., Eng. Co.
Kent Mill Co.
Lehigh Car, Wheel & Axle Wks.
Raymond Bros. Co., The.
Sturtevant Mill Co.
Ernst Wiener Co.
Williams Pat. Pulverizer Co.

RAILROADS.

Illinois Central R. R.
Monon Route.

RAILROAD MATERIAL.

Atlas Car & Mfg. Co.
Ernst Wiener Co.

ROOFING MATERIAL.

Carolina Portland Cement Co.

SAND.

Ottawa Silica Co.

SAND-LIME BRICK MCHY.

American Clay Wkng. Mch. Co.
American Sand Stone Brick Co.

SCALES.

Richardson Scale Co.

SCREENS.

Butterworth & Lowe.
Ersham, J. B., & Sons Mfg. Co.
Johnson & Chapman Co.
Power & Mining Mch. Co.
Sackett Screen & Chute Co., H. B.

SCREEN SECTIONS.

Johnson & Chapman Co.

SEWER PIPES.

Buckeye Fire Clay Co.

SOAP STONE FINISH.

American Soap Stone Finish Co.

STEAM SHOVELS.

The Bucyrus Co.
The Vulcan Steam Shovel Co.

STUCCO RETARDER.

Chemical Stucco Retarder Co.
Ohio & Biwans Retarder Co.

TUBE MILLS.

Alsing, J. R., Eng. Co.
Power & Mining Mch. Co.

WATER PROOFING.

Anhydrous Pressed Stone Co.
Aquatobar Co., The.
Carolina Portland Cement Co.
De Smet, George W.
Girvan-Nachod Co.
Marblehead Lime Co.
Maumee Chemical Co.
Sanitary Construction & Mfg. Co.
Wadsworth, Howland & Co., Inc.

Deep Blast Hole Drilling

Is accomplished more economically than by any other method with the

"American" Drilling Machines

There is 40 years' experience behind these drills—they are standard.

Where electric power is available, equipped with motor they form the most portable and economical drill for quarry use.

Equipped with any power they are backed by the experience and reputation of the world's oldest and largest builders of this kind of drilling machinery.

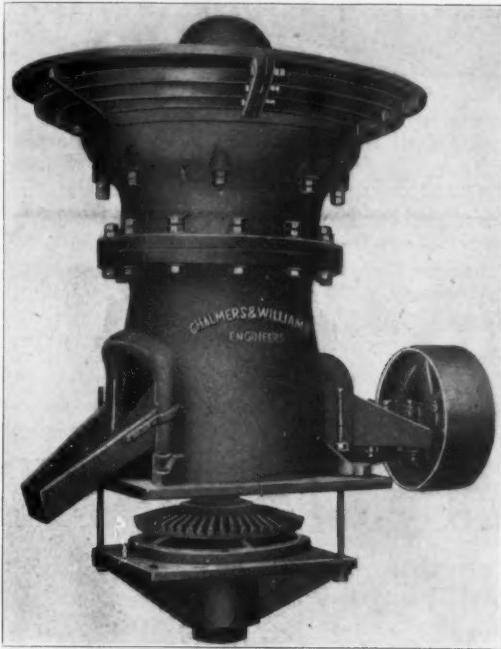
Tell us your blast hole requirements. We have 59 regular styles and sizes of machines for your selection, made in types to meet every possible condition of work.

Write for our new catalog No. 105, the most complete "Drill-Hole" catalog ever issued.

THE AMERICAN WELL WORKS

General Office and Works: AURORA, ILL., U. S. A. Chicago Office: First National Bank Building





Kennedy Gyratory Crusher.

The Up-To-Date CRUSHER

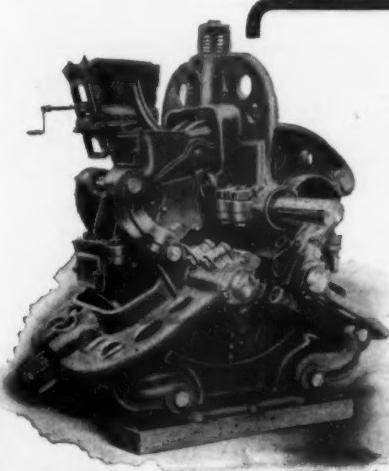
**BIGGEST OPENINGS
GREATEST CAPACITY**

Size for size on the Market.

Made in all sizes.

Send for Catalog.

MARSH CO. 990 Old Colony Building
Chicago.
GENERAL AGENTS.



MAXECON

MEANS

MAXIMUM OF ECONOMY

Years of experience with the assistance of our hundreds of customers has found THE SOLUTION OF GRINDING HARD MATERIALS. The MAXECON PULVERIZER combines highest EFFICIENCY, greatest DURABILITY and assured RELIABILITY. Uses the LEAST HORSE POWER per capacity. Embodies the features of our Kent Mill with improvements that make it MAXECON.

**WE DO NOT CLAIM ALL of the CREDIT
for this achievement**

We have enjoyed the valuable suggestions of the engineers of the Universal Portland Cement Co. (U. S. Steel Corp.), Sandusky P. C. Co., Chicago Portland C. Co., Marquette Cement Mfg. Co., Western P. C. Co., W. H. Harding, Prest., Coplay P. C. Co., Cowham Engineering Co., Ironton P. C. Co., Alpena P. C. Co., Castalia P. C. Co., Pennsylvania P. C. Co., and many other patrons.

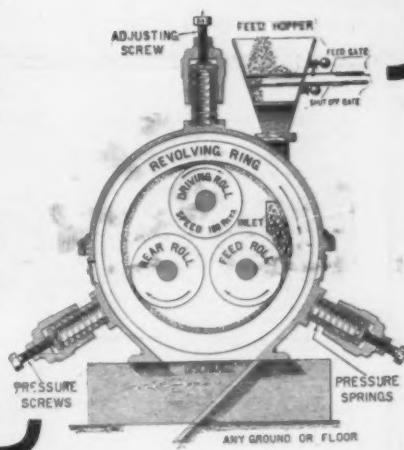
THE RING WOBBLERS

The FREE WOBBLING POUNDING RING instantly and automatically ADAPTS its position to the variations of work.

Its GRINDING ACTION is DIFFERENT than any other; besides the STRAIGHT rolling action of the rolls, the SIDE to SIDE motion of the ring makes the material subject to TWO crushing forces and DOUBLE OUTPUT results.

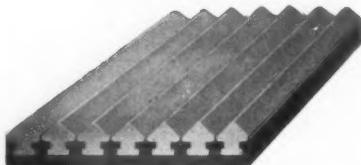
KENT MILL CO.

170 BROADWAY, NEW YORK CITY
LONDON, W. C., 31 HIGH HOLBORN
CHARLOTTENBURG 5, WINDSCHEID STRASSE 40, BERLIN



Tell 'em you saw it in ROCK PRODUCTS

A Tempered Steel Jaw Plate for Blake Type Crushers



Canda Tempered Steel Crusher Jaw Plate

Patented March 31, 1908

The Canda Tempered Steel Jaw Plate for Blake Crushers is composed of Forged and Rolled Chrome Steel Bars, cast-welded and also mechanically interlocked into a backing of tough steel—and the wearing face is tempered to extreme hardness. We are equipped to supply both corrugated and smooth face plates for all sizes and makes of Blake Crushers.

The Canda method of cast-welding forged and tempered steel bars into a mild and tough Steel Backing, is adapted also to the construction of Cone Heads for Gyrotary Crushers, Segments for Corrugated Rolls, etc., etc.

Our products in this line are sold with our special guarantee that they *will wear longer, give better satisfaction and, at our price, prove more economical than any others now on the market.*

—Send for Descriptive Pamphlet—

Represented by

J. F. Spellman, 202 Century Building, Denver, Colo.

George T. Bond, Easton, Pa.

George W. Myers, San Francisco, Cal.



HOWELL'S Celebrated Ball Bearing Heavy Geared Post Drills

For boring anything that
an Auger will penetrate.

Awarded Gold Medal, St. Louis.

We make 40 different styles machines run by Hand, Compressed Air and Electricity for boring Fire Clay, Coal, Rock, Rock Salt, Gypsum and Plaster Rock. Send to day for our handsomely Illustrated Catalogue.

**HOWELL MINING DRILL CO., PLYMOUTH, PA.
(ESTABLISHED 1878.)**



Send for Catalog 25



THE GENERAL CRUSHED
STONE CO.,

So. Bethlehem, Pennsylvania,

CLEVELAND,
OHIO.

have been using one of our Common Sense Elevators for six years—
capacity 400 tons an hour.

THE C. O. BARTLETT & SNOW CO.

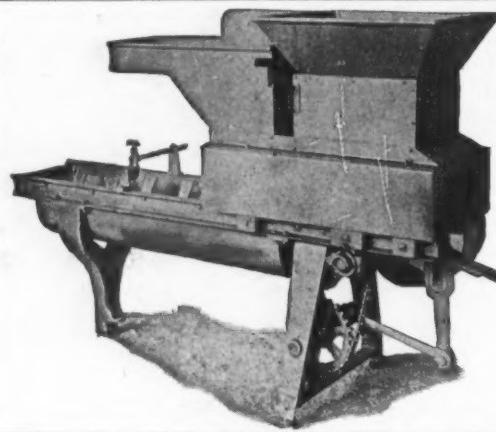
FARREL ORE AND ROCK CRUSHER

USED IN ALL PARTS OF THE WORLD—LARGE
RECEIVING CAPACITY—SPECIALLY DESIGNED
AND CONSTRUCTED FOR HARDEST KIND OF WORK

COMPLETE CRUSHING PLANTS OUR SPECIALTY

• SEND FOR CATALOGUE •
EARLE C. BACON, ENGINEER.

FARREL FOUNDRY & MACHINE CO. HAVEMEYER BUILDING, NEW YORK



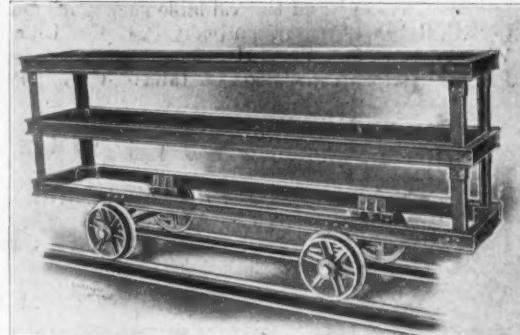
“KENT” CONTINUOUS MIXER

“The Mixer that measures
and Mixes”

“You fill the Hopper, the
Mixer does the rest”

Simple, reliable, economical, durable
and moderate in price

Write for Catalogue and Prices to
The Kent Machine Co.
306 N. Water St., Kent, O.

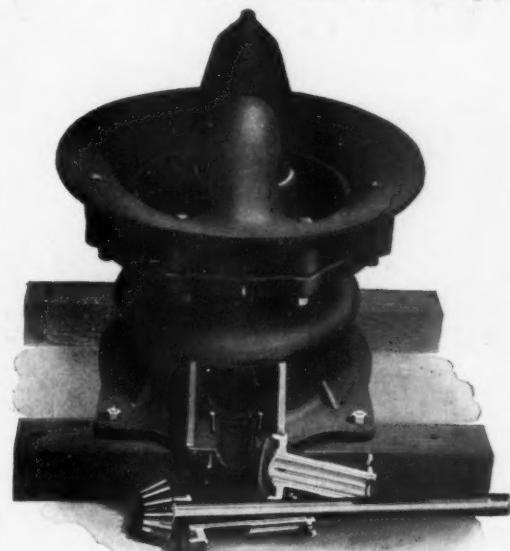


The “KENT” Block Cars, Transfer Cars, etc.

Tell 'em you saw it in ROCK PRODUCTS

PRACTICAL CRUSHER MEN

will appreciate the simple method of re-babbitting the eccentric, and the ease with which the counter shaft and pinion can be removed, in the style "C"



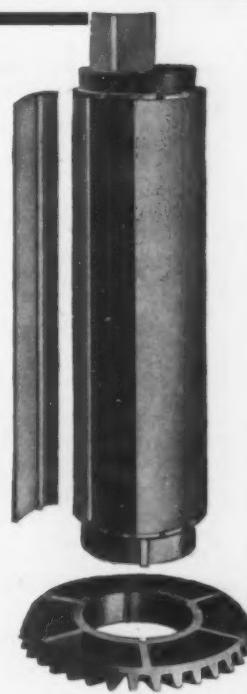
SYMONS CRUSHER
Showing Countershaft Bearing, with Pinion
and Shaft Removed.

SYMONS CRUSHER

The babbitt is cast in sections, which fit into vertical slots, machined into the eccentric. No babbitting mandrel is needed. No melting or pouring of babbitt is required—just knock out the old sections and slip in the new ones.

WRITE FOR CATALOG No. 166

THE T. L. SMITH CO.
301 Old Colony Bldg. CHICAGO



Symons
Eccentric,
Detachable
Gear
and
Sectional
Babbitt



Style No. 1, 7x8 Jaw Opening, 4 Horse power.

Who Crushes Your Rock?

We want to know, because we think we can save you money by introducing our crusher in your locality. This cut shows an actual photograph of our No. 1 Crusher—one of our small ones—with samples of rock crushed to eight different sizes. You must remember that this crusher is not an experiment, but it is remarkable to know that this adjustment can be made instantaneously. We manufacture twenty different sized crushers, all described in our new No. 5. Catalogue. Would you like to have one of these sent to your address?

Eureka Stone and Ore Crusher Co.
Cedar Rapids, Iowa



AUSTIN GYRATOR Y CRUSHER

The World's leading rock and ore breaker.

The only self lubricating Crusher.

The only Crusher having double countershaft bearing.

Simple construction, correct design.

Thousands in use.

Plans and specifications furnished for any sized plant.
Send for Catalogue No. 17.

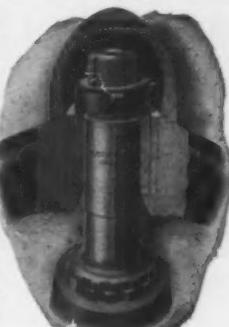
All experienced users recognize that the efficiency and durability of the suspension bearing as applied to Gyratory Crushers, depends upon locating the bearing at the point of least gyration or movement of the main shaft.

A perfect suspension can be made only by locating the bearing at the point where there is no movement of the shaft. That being a mechanical impossibility it follows that superiority is obtained in fixing the bearing at the point of least gyration of the shaft.

As the accompanying cut will show, the movement of the shaft at the point of suspension in the Austin Crusher is reduced to the minimum and practically eliminated. Consequently the highest possible degree of efficiency and durability is obtained.

Austin Manufacturing Co., Chicago,

New York City Office
1682 FULTON BUILDING
Hudson Terminal

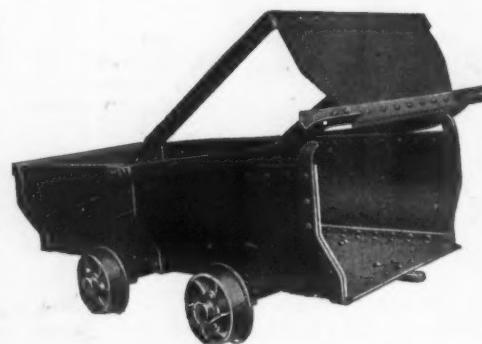


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→IN STOCK!!← 5-1½ YD. QUARRY CARS

For immediate shipment similar to cut below

36"
G A U G E



14"
W H E E L S

These Cars are new all steel, equipped with self-oiling wheels and wood sub sill bumpers. Height 34" top of rail to top of car. See catalogue No. 31-R for other types.

H. B. Sackett Screen & Chute Co.

4212 State St., Chicago, Ill.

SYSTEMATIC CONCRETE MIXER

20 advantages—Unparallelled. WON 180 different times in competition.

For any proportion, any material, lock proportions with Yale lock and key. Horizontal drive, high wheels, low hoppers, cement hopper holds 150 lbs. hard metal paddles, 10 gauge steel mixing barrel, steel axles, best engine made. See it at Spaces 181 and 182, coming Chicago Cement Show.

Figs. 18 to 20.

1910. Also see Cheapest and Best Block and Brick Machines made.

The SYSTEMATIC leads. Investigate and Profit thereby. Get new Catalog "R."



CEMENT
MACHINERY CO.
JACKSON, MICH.

Do You Have Cars to Haul? The Davenport Locomotive Will Save Money



Special Designs for Special Purposes

Any Size, Any Gauge, Any Weight

Write for Prices and Particulars

DAVENTPORT LOCOMOTIVE WORKS

DAVENTPORT, IOWA

The Buckeye Fire Clay Co.

Manufacturers of
Sewer Pipe, Flue Linings, Chimney
Tops, Fire Brick, Grate Tile, Ground
Fire Clay, Wall Coping, Etc.

UHRICHSVILLE, . . . OHIO

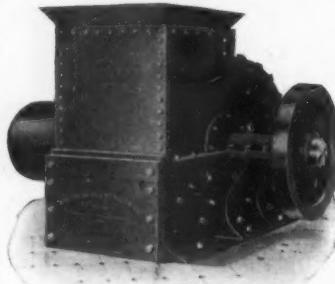
HIGH GRADE FIRE BRICK

For Cement Works, Lime Kilns, Cupolas, Steel and Iron Works of every description.

LOUISVILLE FIRE BRICK WORKS,

Highland Park, Ky., P.O.

American Ring-Hammer Pulverizer



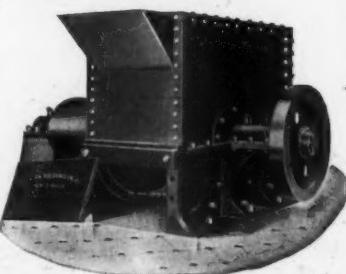
ROCK PULVERIZER—Six Sizes.

operates with 30 to 60 per cent less speed and power than other rotary pulverizers. All grinding parts made of highest grade Manganese Steel. Cost of maintenance greatly reduced. Ability to produce quantity and fineness challenges all competitors. Thirty days' actual operating test at your Works. All pulverizers guaranteed. Send for circulars.

American Pulverizer Co.

Suite 410, Jaccard Bldg.

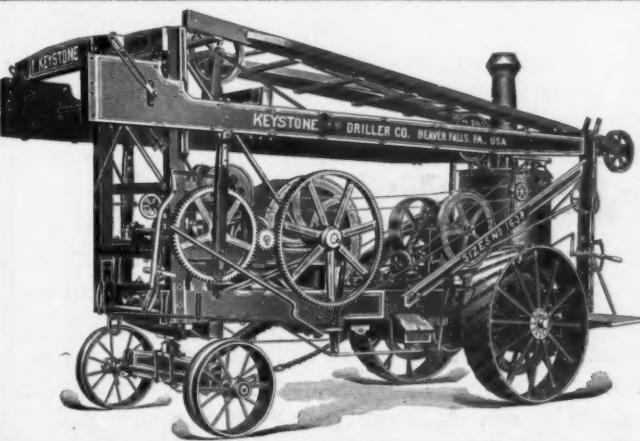
ST. LOUIS, MO.



SHALE PULVERIZER—Six Sizes.

Tell 'em you saw it in ROCK PRODUCTS

KEYSTONE CHURN DRILLS FOR HEAVY BLAST HOLES



IN CEMENT and STONE QUARRIES, where large and deep blast holes can be used to advantage, these machines form the cheapest and quickest means of sinking 6 inch holes.

Penetrate any formations, any depth, 30 or 300 feet. Self-moving or portable, if desired.

Ask for Catalog No. 4.

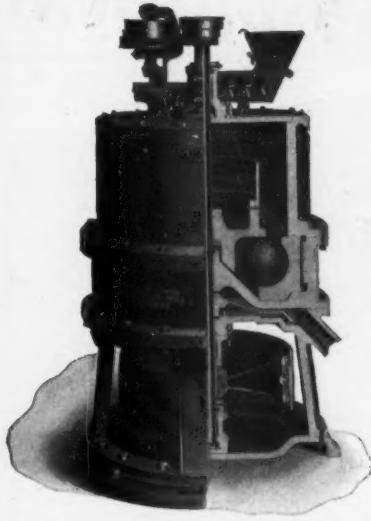
KEYSTONE TRACTION DRILL CO.

Monadnock Bldg., BEAVER FALLS, PA., CARTHAGE, MISSOURI.
CHICAGO. 170 Broadway, NEW YORK.

CARTHAGE, MISSOURI.

CHICAGO. 170 Broadway, NEW YORK.

The Fuller-Lehigh Pulverizer Mill



Cement Companies equipped with Fuller Mills advertise the fact that the consumer gets 38 pounds more of the IMPALPABLE POWDER

or REAL CEMENT in every barrel of cement produced by The Fuller Mill than by any other

Produces Commercially

Cement having a higher percentage of Impalpable Powder than can be obtained by any other mill. Tests show that the tensile strength of a one-fourth mortar made with cement pulverized by the Fuller Mill is higher than the tensile strength of a one-third mortar made with cement pulverized to the fineness required by the Standard Specifications.

Lehigh Car, Wheel & Axle Works

Main Office: CATASAUQUA, PA.

New York, N. Y.

Hamburg, Germany, Alsterdamm 7.

Kansas City, Mo.

Tell 'em you saw it in ROCK PRODUCTS

RAW MATERIAL GRINDERS

New Williams Universal



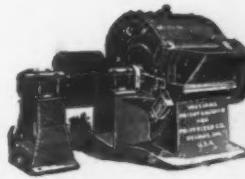
FOR TUBE MILL FEED
800 BARRELS 22 HOURS
95 PER CENT THROUGH 20 MESH
HORSE POWER 40 TO 50

WE ALSO GRIND
GYPSUM, LIME, COAL AND SHALE

Vulcanite Grinder

FOR ROLLER MILL FEED
TAKES MATERIAL FROM
GYRATORY, DIRECT

CAPACITY 20 TONS HOUR
FINENESS $\frac{1}{2}$ IN., $\frac{1}{4}$ IN. AND $\frac{1}{8}$ IN.
HORSE POWER 40 TO 45
1,300 MILLS NOW IN USE



WRITE FOR BULLETIN NO. 12

WORKS:
ST. LOUIS, MO.

SALES OFFICE:
OLD COLONY BLDG.
CHICAGO

Williams Pat. Crusher & Pulverizer Co.

San Francisco Offices: 428 Monadnock Building

"THE LONG LIVED CASTINGS"

ARE MADE FROM:

TRADE **TISCO** MARK MANGANESE STEEL

THERE is no copyright on the name MANGANESE STEEL. All steel contains manganese and may be called manganese steel.

TISCO MANGANESE STEEL is a patented product. It's "TAYLOR-MADE" and that's enough to guarantee its quality.

Our study is the application of SPECIAL STEELS for SPECIAL PLACES. We have reduced the repair account of many plants.

Crusher parts, chain, sprockets, gears, pinions of TISCO steels will wear.

TAYLOR IRON AND STEEL CO.

SOLE MANUFACTURERS

HIGH BRIDGE, NEW JERSEY.

Vulcan Steam and Electric Shovels

fill all the requirements of heavy quarry work, because they are **correctly designed and substantially built**. Every part is made of material which we know from our 30 years' experience in high class steam shovel building to be the best for the purpose. Before shipment, each shovel is set up complete in our yards, **thoroughly tested** under full steam and all parts **carefully inspected and adjusted**. The purchaser is invited to witness this test, and the shovel isn't shipped until **both of us are satisfied** that it is right in every respect. In addition to this, we give him the benefit of a 10 day **trial test in his own quarry** and he doesn't have to accept the shovel until we have **demonstrated on his own work** that it is just as represented. We

have so much confidence in the ability of our shovels to "make good" that we cover every one with an **iron clad guarantee** to give **complete satisfaction**. There isn't much chance for you to lose on a proposition like that, is there? Do you want to try one on these terms? It's up to you.

Giant Boom Shovels

Six sizes, $1\frac{1}{2}$ to 5 cubic yard dipper.

Little Giant Shovels

Two sizes, $1\frac{1}{2}$ cubic yard dipper.

Revolving Shovels

Three sizes, $\frac{1}{2}$ to $1\frac{1}{2}$ cubic yard dipper.

Steam or Electric Power. Traction Wheels or Railroad Trucks.

Send today for full information.

The Vulcan Steam Shovel Co. TOLEDO,
OHIO.



95-C IN SANDUSKY PORTLAND CEMENT COMPANY'S QUARRY.

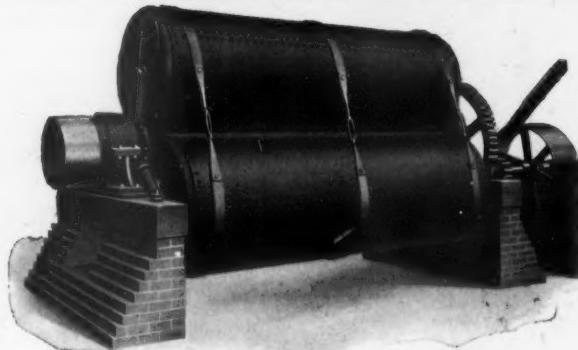
Bucyrus Shovels Are Loading Crushed Stone and Digging Blasted or Unblasted Cement Rock in the Leading Quarries in the United States.

THE BUCYRUS CO.

Branch Offices
NEW YORK
SAN FRANCISCO

Main Office & Works:
South Milwaukee, Wis.

Sent on Approval



U. S. Patent Aug. 13, 1907

WE will install our Multiple Tube Mill for any reliable concern **on approval**.

We are willing to do this to **prove** that our mill is the most economical pulverizing device in existence. We claim superiority over the ordinary tub mill in that the construction is different and an enormous amount of power is saved. The load is distributed equally around the center, about which it revolves while in operation.

Write for Bulletin

J. R. Alsing Engineering Co.

134 Liberty St.

New York, U. S. A.

Make Money

by adopting Nuttall cut or planed gears as your standard. You will be surprised at the reduction in your repair bills.

**Nuttall—Pittsburg**

When in a hurry, wire us.

THE FULLER ENGINEERING CO.
DESIGNING, CONSTRUCTING AND OPERATING
ENGINEERS ANALYTICAL CHEMISTS
CEMENT MILLS A SPECIALTY
OFFICES: ALLENTOWN NAT. BANK BLDG. ALLENTOWN, PA.

MACHINERY

FOR

Industrial Plants

We manufacture machinery for transmitting power, and for elevating and conveying materials in and about cement plants, rock crushing plants, lime plants, mortar works, plaster works, and other industries.

We manufacture screw conveyors, belt conveyors, and all sorts of chain and cable conveyors, for handling rock, lime, sand, etc.

We manufacture elevators, also, for handling the same kinds of material. Our lines include shafting, couplings, bearings, collars, pulleys, gears, rope sheaves, sprocket wheels, elevator buckets and bolts, steel elevator casings, etc.

We have our own foundry, sheet metal department and machine shop. We employ first-class help in all departments and use high-grade materials.

When you are in need of anything in our line, try us.

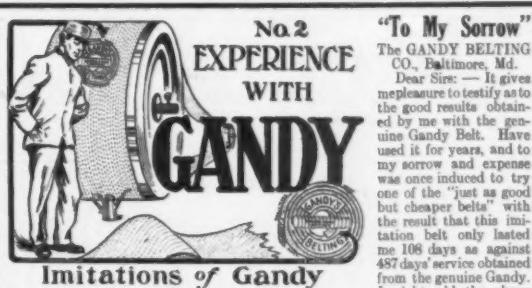
Catalog No. 34

H. W. Caldwell & Son Co.

17th St. and Western Ave., Chicago

Fulton Bldg., Hudson Terminal, No. 50 Church St.
NEW YORK CITY

ROCK PRODUCTS



belt was an 18 inch 8-ply belt used as a conveyor in a saw mill of the Brown, Clarke & Howe Co., Williamsport.

(Signed) W. H. KLINE, Williamsport, Pa.

This letter is only an echo of the many, many experienced belt users who are induced to purchase the "Just as Good as Gandy" belts.

Remember there is but one maker of "The Gandy Belt," and there is but one Gandy Belt to be bought in the United States today and that is "**The Gandy Belt**" manufactured solely by the Gandy Belting Company, of Baltimore, Md.

Write for our booklet "Experience with Gandy." It also tells about "The Gandy Belt Dressing."

THE GANDY BELTING COMPANY,

New York Branch: 88-90 Reade St. Baltimore, Md.

Wade Iron Sanitary Mfg. Co.

MANUFACTURER OF

Wade Back Water Gate Valves, Clean-Out House
Drainage Fittings, Iron Catch Basins and Cast
Iron Covers, Etc.

Send for Catalogue.

Long Distance Phone, Harrison 6713.

43 E. Harrison Street, CHICAGO, ILLS.

CLINTON METALLIC PAINT CO.
CLINTON, N. Y.

LARGEST AND OLDEST MANUFACTURERS OF

BRICK AND COLORING

Be sure you get the genuine with the "Little Yellow Side-Label"
on each package.

Let us tell you about Side-Walk Black.



Osborne Crushing Plant of the Springfield Coal & Ice Co.

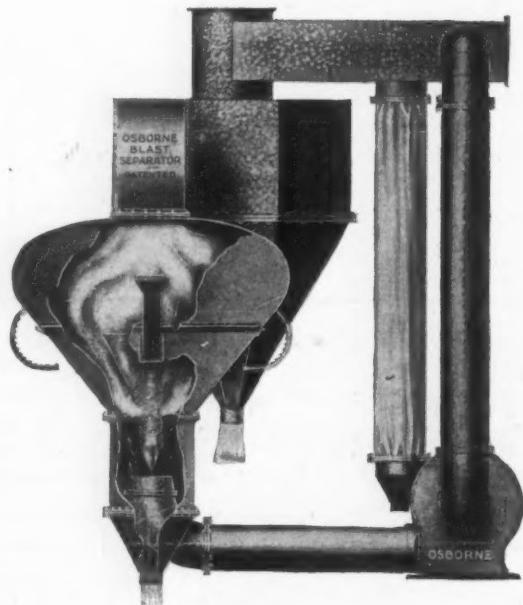
We are prepared to ship crushed limestone from
 $\frac{1}{2}$ to $3\frac{1}{2}$ inches on short notice.

On account of the high percentage (96 to 98%) carbonate of calcium, this material is especially suited for fluxing.

Excellent Shipping Facilities and Prompt Service.

The Springfield Coal & Ice Co.
SPRINGFIELD, O.

STOP LOSING MONEY In Your Grinding Room



You know it costs money to separate your material after it is ground, so why not use the best means of separation?

We can prove that the

Osborne Pneumatic Blast Separator

IS THE BEST AND CHEAPEST MACHINE FOR YOU TO USE. It will give you larger capacities for less horse power than any other machine on the market. Will separate your material to 200 mesh fine.

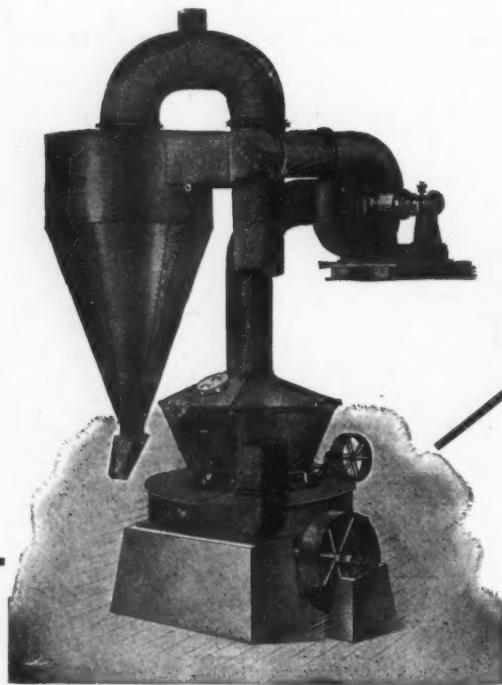
Capacities, from $3\frac{1}{2}$ to 10 tons per hour of finished product 95% 100 mesh fine.

STOPS ALL FLOATING DUST IN YOUR GRINDING ROOM.

Circular "A" Tells You More About It.

Manufactured by

THE GRISCOM-SPENCER CO. 90 West Street, New York City



65%

SAVING

IN COST OF

GRINDING COAL

AT A

CEMENT PLANT

A Cement Manufacturer ground in 1907—Thirteen Thousand Tons Coal

Using the Raymond Roller Mill with Air Separation

The cost to him for grinding was per ton—Twelve and One Half Cents.

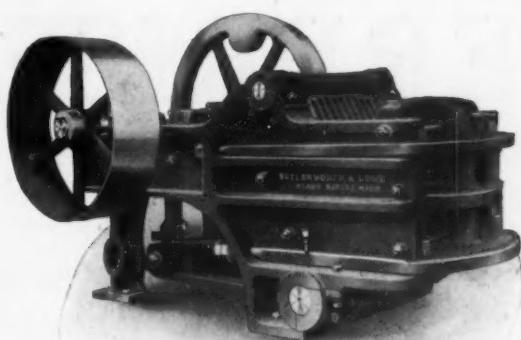
The cost to him for grinding was per ton—Thirty Three and Six-tenths Cents.

We cite these figures as simply typical of the extremely satisfactory results secured by our customers with the Raymond System, in grinding and handling all kinds of materials, from coal to dry paint colors, from limestone to alfalfa.

To the manufacturer who grinds any material whatsoever, we say—"You are probably losing profits if you are not using the Raymond System of Grinding and Separating." We are always ready to "show you."

Raymond Brothers Impact Pulverizer Co. 141 Laflin St., CHICAGO

Tell 'em you saw it in ROCK PRODUCTS



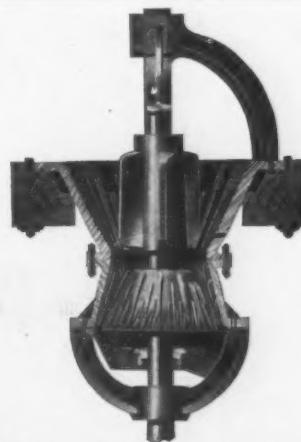
CRUSHERS

for soft rocks, burnt lime, etc.

GYPSUM MACHINERY

We design modern Plaster Mills and make all necessary Machinery, including Kettles, Nippers, Crackers, Buhrs, Screens, Elevators, Shafting, etc.

SPECIAL CRUSHER-GRINDERS FOR LIME HYDRATORS



BUTTERWORTH & LOWE

17 Huron Street, GRAND RAPIDS, MICH.

GET THE BEST Finest Line of Gypsum Machinery

MADE

KETTLE CRUSHER NIPPERS

ASK FOR CATALOG OF

MOGUL NIPPERS, OPEN DOOR POT CRUSHERS

Best Mills in the United States Have Them

McDONNELL BOILER & IRON WORKS, Des Moines, Iowa, U. S. A.

"Formerly Des Moines Mfg. & Supply Co."

SPECIAL MACHINERY AND FORMULAS

FOR THE MANUFACTURE OF

WOOD FIBRE PLASTER, FIRE PROOFING
AND KINDRED PRODUCTS

We furnish the latest improved FIBRE MACHINE, (fully patented) also
FORMULAS, on a reasonable proposition. The strongest companies
and oldest manufacturers are operating under my contracts.
WRITE FOR TERRITORY

The Ohio Fibre Machinery Co.

J. W. VOGLESONG,
GENERAL MANAGER

Elyria, Ohio

KING'S WINDSOR CEMENT FOR PLASTERING WALLS AND CEILINGS

Buffalo Branch, CHAS. C. CALKINS, Manager
322 W. Genesee Street

Elastic in its nature, can be applied with 25 per cent less labor and
has 12½ per cent more covering capacity than any other similar
material

J. B. KING & CO., No. 1 Broadway, New York

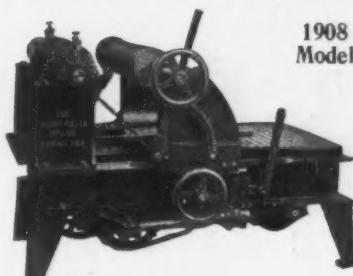
**PLYMOUTH
CEMENT
AND
WOOD FIBER
PLASTER**

The Brand that's Made from Pure
Gypsum Rock.

WRITE US FOR PRICES AND
ADVERTISING MATTER.

Plymouth Gypsum Co.
Fort Dodge, Iowa

The Shuart-Fuller Improved Fiber Machine



1908
Model

Has an automatic, proportional, increasing feed, which keeps grade of fiber uniform from start to finish, and holds machine to highest possible rate of production for the grade of fiber and number of saws. Does not begin with fiber and end with dust, nor fall off in rate of production on each log, from 40 to 80 per cent as do the ordinary non-increasing feed machines. Works logs up to 24x24 inches. No royalty string attached to sale. Pay no attention to misrepresentations of our competitors, but write for descriptive circular and terms to

The Shuart-Fuller Mfg. Co.

ELYRIA, OHIO

St. Louis, June 17, 1907.

Gentlemen:—We are just in receipt of advice from our New Mexico plant wherein they state that the Wood Fiber Machine recently shipped by you is doing all that we have asked of it and running very fine.

ACME CEMENT PLASTER CO.

By Jas. R. Dougan, Sec.



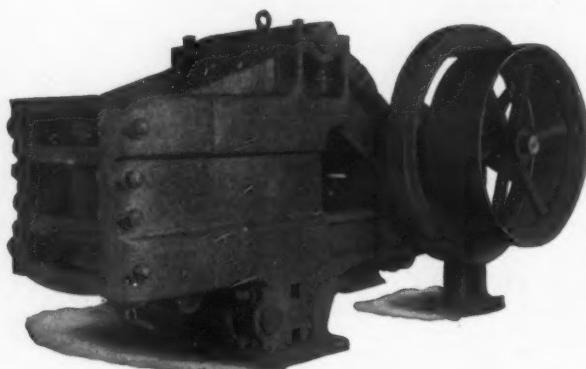
ENTERPRISE PLASTER MIXER

**NOISELESS,
DURABLE and EFFICIENT.**

For Mixing Hair Fibre, Wood Fibre and
Retarder with Dry Plastering
Materials.

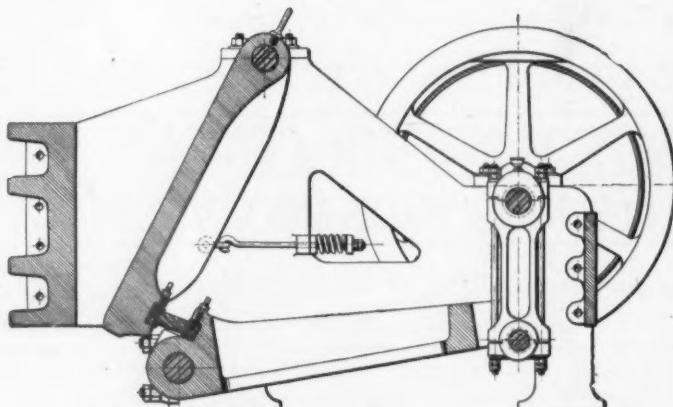
Calcining Kettles

Jaw and Rotary Crushers for Gypsum, Reels,
Vibratory Screens, Hair Pickers and Trans-
mission for applying power.



EHRSAM NO. 4 JAW CRUSHER.

This machine will handle large chunks and reduce from 30 to 40 tons of Gypsum per hour to $2\frac{1}{2}$ -inch maximum or smaller if wanted.



NO. 4 JAW CRUSHER, SHOWING SECTIONAL VIEW OF NIPPER.
The jaw opening at inlet is 18x28 inches.

The J. B. Ehrsam & Sons Mfg. Co.,
BUILDERS OF
COMPLETE EQUIPMENTS FOR PLASTER MILLS
Enterprise, Kansas

Stucco Retarder

Strong
Uniform
Fine Ground } RETARDER

We are the oldest Retarder firm
in the United States, and above
is our motto. New fire-proof
plant and prompt service.

FREE SAMPLE ON REQUEST

Chemical Stucco Retarder Co.
WEBSTER CITY, IOWA.
INCORPORATED 1895

CUMMER CONTINUOUS PROCESS
FOR
CALCINING GYPSUM
NO KETTLES USED PLANTS IN OPERATION

Great Saving in Cost of Manufacture and Quality of
Product Guaranteed.

The F. D. CUMMER & SON CO., Cleveland, O.

Plaster! Plaster!

Iowa Hard Plaster Co.

HARD BY NAME. HARD BY NATURE.
HARD TO BEAT. NOT HARD TO GET.

Iowa Hard Plaster Co. FT. DODGE
IOWA

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Cement and Lime Manufacturers

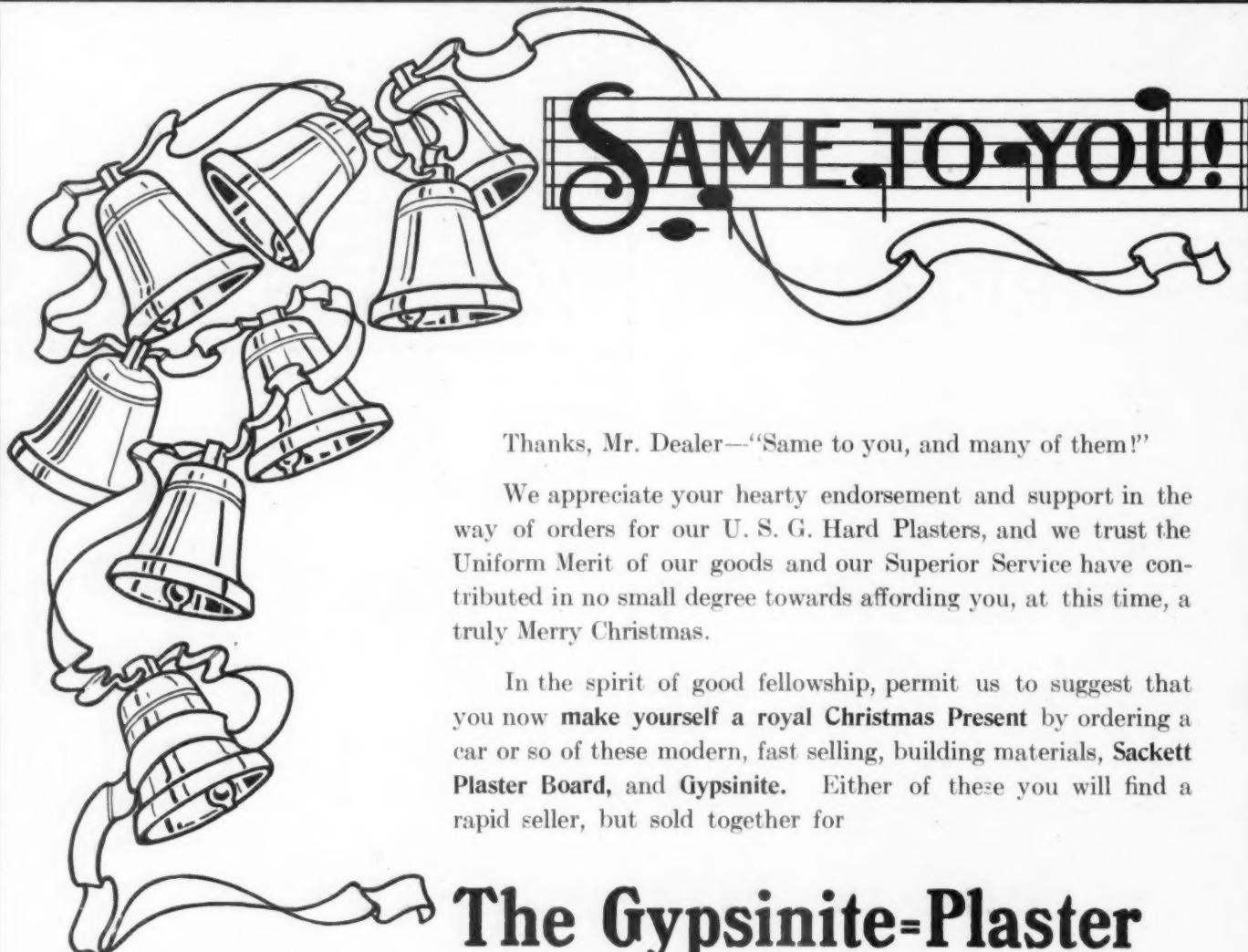
- Manufacturer of Hydraulic Cement
A. V. Blehinger. Price \$1.25.
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G. R. Burnell. Price \$0.60.
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David B. Butler. Price \$5.00.
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A. I. Dibbin. Price \$2.00.
- Cements, Limes and Plasters
Edwin C. Eckel. Price \$6.00.
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Gen. Q. A. Gillmore. Price \$4.00.
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S. B. Newberry. Price \$0.50.
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Wm. M. Torrance and others. Price \$1.50.
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Fred P. Sutcliffe. Price \$1.00.
- Calcareous Cements
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Cement Users

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- The Uses of Hydraulic Cement
Frank Harvey Enos. Price \$1.00.
- Portland Cement for Users
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- Cements, Mortars and Concrete
Myron C. Falk. Price \$2.50.
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W. H. Gibson and W. L. Webb. Price 1.00.
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F. B. Gilbreth. Price \$5.00.
- Hand Book of Cost, Data
Halbert P. Gillette. Price \$4.00.
- Concrete Construction
H. P. Gillette and C. S. Hill. Price \$5.00.
- Cement Workers' and Plasterers' Ready Reference
H. G. Richey. Price \$1.50.
- Notes on Testing and Use of Hydraulic Cement
Fred P. Spalding. Price \$2.00.
- Rainforced Concrete
A. W. Buel and C. S. Hill. Price \$5.00.
- Concrete
Edward Godfrey. Price \$2.50.
- Reinforced Concrete
C. F. Marsh and Wm. Dunn. Price \$7.00.
- Practical Treatise on Foundations
W. Patton. Price \$5.00.
- Concrete
Thomas Potter. Price \$3.00.
- Cement and Concrete
Louis C. Sabin. Price \$5.00.

ROCK PRODUCTS, 355 Dearborn Street, CHICAGO

Tell 'em you saw it in ROCK PRODUCTS



Thanks, Mr. Dealer—"Same to you, and many of them!"

We appreciate your hearty endorsement and support in the way of orders for our U. S. G. Hard Plasters, and we trust the Uniform Merit of our goods and our Superior Service have contributed in no small degree towards affording you, at this time, a truly Merry Christmas.

In the spirit of good fellowship, permit us to suggest that you now **make yourself a royal Christmas Present** by ordering a car or so of these modern, fast selling, building materials, **Sackett Plaster Board**, and **Gypsinite**. Either of these you will find a rapid seller, but sold together for

The Gypsinite-Plaster Board System of Fireproofing

will open up for you a surprising new field, replete with new customers, trade satisfaction and goodly profits. Do you realize the enormous strides this new fireproofing system is making in the building material world? Builders are insisting on it; Architects are freely specifying it, and **Dealers are selling it!** It has pronounced economies **plus** the practical fireproofing feature for **general building purposes**—these features are a mighty dynamo of Sales force!

Be good to yourself, and prepare for an unusual year of business and net profit, by taking on our Gypsinite and Plaster Boards. Information, Literature, Quotations, await your call.

ADDRESS OUR NEAREST OFFICE

United States Gypsum Co.

New York Cleveland Chicago Minneapolis San Francisco

Manufacturers of and Dealers in Plaster Board

NOTICE

ALL plaster boards made of paper and plaster now being offered by unauthorized manufacturers, dealers and agents, are infringements of our patent. These spurious plaster boards are made in various forms differing somewhat from our plaster board with the idea of evading our patent.

In a decision of the United States Circuit Court for the District of New Jersey rendered on the third of February, 1909, in the case of the Sackett Plaster Board Company, Complainant, versus Stephen J. Rutkowsky, Defendant, the Court sustains the Sackett Patent No. 52123, and declares the patent infringed. This decision is important to present manufacturers of plaster board because the opinion of the Court says, "SACKETT APPEARS TO HAVE BEEN THE FIRST TO HAVE MADE A PLASTER BOARD THAT COULD BE SUCCESSFULLY USED AS A SUBSTITUTE FOR LATH AND PLASTER".

In the opinion of our counsel, "Any makers or users of, or dealers in, plaster board made up of paper and plaster in which the paper is used as a binder, infringe our patent," and we shall vigorously prosecute any such infringements.

We are prepared to supply all dealers with Sackett Plaster Board at reasonable prices, and purchasers from us or our authorized agents will avoid all liability for damages or the expense of litigation.

Sackett Plaster Board Co.

New York City

Chicago, Ill.

Garbutt, N. Y.

Grand Rapids, Mich.
Fort Dodge, Ia.

ANNOUNCEMENT

We are just closing our second year and are pleased to say, the high quality of our various products, together with our unexcelled service, has made so many friends for the "NIAGARA" brand of

Wood Fiber Plaster
Neat Cement Plaster Sanded Wall Plaster
Finishing Plasters Stucco

that it has been necessary to increase the capacity of our Oakfield Mills. This has been done, and we therefore offer our many patrons and the trade generally **QUALITY, SERVICE and CAPACITY** sufficient to enable us to handle any volume of business promptly, and we would appreciate your order.

NIAGARA GYPSUM COMPANY
Mills: Oakfield, N. Y. Office: Buffalo, N. Y.

RETARDER Wood Fiber

**THE OHIO and BINNS RETARDER CO.
PORT CLINTON, OHIO**

Reliable Stucco Retarder=Strong=Uniform in Strength=

Duplicate power plant (electric and steam power) installed so as to preclude any possibility of shut down and consequent shut down of mixers who depend upon us for their supply of Retarder. We have a capacity large enough to supply every retarder user in the U. S. and Canada, and some to spare for Europe. Our mills are fireproof in every particular. Write us for prices and information.

**THE OHIO and BINNS RETARDER CO.
PORT CLINTON, OHIO**

THIS new illustrated sixty-four page catalog has just been received from the press and will be mailed to you free upon receipt of your request.



It is a book compiled after many years of experience in the manufacture and use of concrete machinery and equipment, and embodies many fine-toned illustrations of the highest class concrete machinery in existence. It also contains much useful information for the buyer and will be found a handy reference book.

If you are in the market for anything in the line of concrete machinery or equipment you should receive this catalog before purchasing. The merits of the machines and the clear illustrations are sure to please and interest you. Don't put it off--send us your name right now. Tell us just what you are interested in most and receive this catalog with complete information and prices.

The Cement Tile Machinery Co.
740-45 Rath St., EAST WATERLOO, IA.



McIntosh Automatic Sand-Cement Brick Machine

Weight, 11 tons.
Guaranteed Capacity, 20,000 per day.

As the McINTOSH works entirely automatically, if the material and pallet hoppers are kept supplied, the guaranteed output is assured.

Makes eight (8) brick on a pallet at each revolution, and puts the same TREMENDOUS PRESSURE on every brick.

Send us the cost of Sand, Cement and labor in your vicinity and we will give you the approximate cost of manufacturing SAND - CEMENT BRICK with our equipment.

Write for our new catalogue describing our machine and the complete installation of a modern Cement Brick Plant, also valuable information regarding the manufacture and curing of Cement Brick.

Oklahoma & Texas Cement Brick Co.

OKLAHOMA CITY
OKLAHOMA, U.S.A.

Tell 'em you saw it in ROCK PRODUCTS

HERCULES BLOCK MACHINES

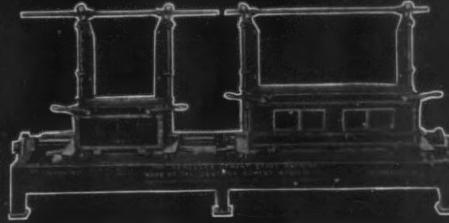
ARE THE FASTEST, SIMPLEST,
STRONGEST AND

BEST MACHINES BUILT
AND WE CAN PROVE IT
THEY EXPAND TO MEET EVERY DEMAND

THE ONLY machine making any size of stone from a 3 inch block to a 6 foot water table.

THE ONLY face down machine that allows for a really coarse WET mixture with fine facing.

THE ONLY machine on which four 16 inch stone can be made at ONE time, or two 20 inch, 24 inch or 32 inch stone at one time.



THE HERCULES IS AN OLD, ESTABLISHED MACHINE

Built along Correct Lines and Endorsed by the Leading Contractors and Builders. They are used in all parts of the world.

THE
Hercules
Power
Tamper
Will Save You Money

It will increase
your capacity and
enable you to produce a better grade
of

**Concrete
Building
Blocks**

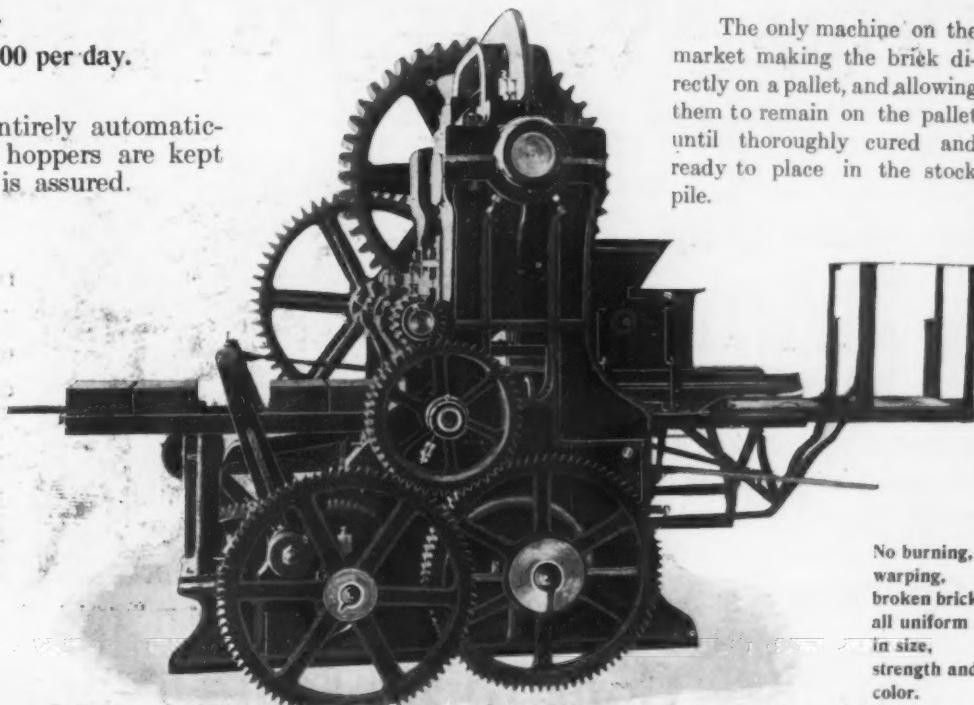
Blocks that are
TAMPED EVENLY
—THOROUGHLY—
PERFECTLY.

It costs you nothing to investigate.

For Catalogues of
HERCULES
Block Machines
or Tamers

Address
**CENTURY CEMENT
MACHINE CO.**
288-298 St. Paul St.
ROCHESTER, N.Y.

The only machine on the market making the brick directly on a pallet, and allowing them to remain on the pallet until thoroughly cured and ready to place in the stock pile.



No burning,
warping,
broken brick;
all uniform
in size,
strength and
color.

Anchor Concrete Block Machines



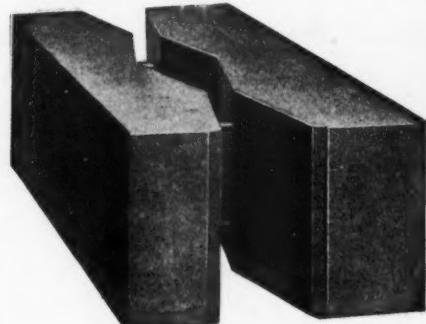
ANCHOR MACHINE IN POSITION
TO RECEIVE MIXTURE

THEY HAVE STOOD THE TEST OF TIME AND MADE GOOD,
WITH A PROFIT TO THE USER, TOO.

Anchor continuous air space blocks guaranteed frost and moisture proof.

Anchor blocks are bound together with firm $\frac{1}{4}$ inch galvanized iron rods 8 inches long and turned one inch at each end.

Standard Anchor Machines make blocks that lay in the wall 8 in. by 24 in., any width from 8 in to 12 in.



THE FAMOUS ANCHOR BLOCK,
ENDORSED BY ARCHITECTS EVERYWHERE.

Anchor Jr. Machines make blocks that lay in the wall 8 in. by 16 in. and any width from 8 in to 12 in.

ONE ANCHOR MACHINE, PLUS ENERGY, BACKED
BY A LITTLE CAPITAL, MEANS THE PRODUCTION OF
HIGH-GRADE BUILDING ALWAYS IN DEMAND.

WRITE FOR CATALOGUE AND PRICES.

ALL MACHINES SOLD DIRECT TO THE TRADE.

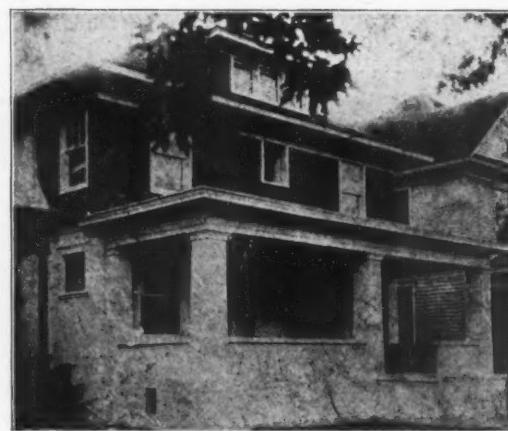
Anchor Concrete Stone Company
ROCK RAPIDS, IOWA

KELLASTONE PURE WHITE PLASTIC STONE

Applied on wood or metal skeleton frame, inside and outside walls, porch complete, steps and columns.

Water Proof
Fire Proof
Acid Proof

Imagine a house without a crack or crevice. No carpets; floors and base one piece. Rug center with colored border.



Main Factory

Address

KINTZ DWELLING, South 7th Street, Terre Haute, Ind.

Architects can let their fancy run wild. Kellastone can be applied on any shape or form, wood or iron. Twenty-five shades or colors.

Branch factories will be established throughout the United States.

Main Office

Sanitary Construction and Manufacturing Co.
TERRE HAUTE, IND.

Tell 'em you saw it in ROCK PRODUCTS

The Improved Peerless One-Man Cement Brick Machine

Equipped with new tamping device, which tamps ten bricks in the machine at one operation, making 12,000 perfectly formed bricks in ten hours.



The superiority of the Peerless Brick Machine was demonstrated conclusively at all of the recent conventions.

It is the greatest invention in the industry. Simple, strong and durable. Combines all the advantages of every other machine at the smallest cost.

The most successful and most easily operated one-man brick machine ever made.

Write at once for particulars.

Peerless Brick Machine Co.
15 NORTH SIXTH STREET MINNEAPOLIS, MINN.

DOES IT PAY?

THE Concrete Sand and Stone Co., of Youngstown, Ohio, is running a full page advertisement monthly in ROCK PRODUCTS. Here's what Manager A. A. Pauly says about it:

Q. "We get enquiries from all over the world and are satisfied that ROCK PRODUCTS has been instrumental in aiding our business materially, because during most of our business career it is the only paper we have used."

Q. "We consider that ROCK PRODUCTS reaches the people, and is in close personal touch with the men 'behind the guns.' We have recently closed a contract with Buenos Ayres manufacturers which already amounts to \$30,000, and probably will exceed five times this amount, as a direct result from our ad. in ROCK PRODUCTS."

Q. "We figure that the personal co-operation of your editorial and field forces has been instrumental with our general publicity in ROCK PRODUCTS, in placing several hundred thousand dollars worth of business."

Does It Pay?

Q. Ask Mr. Pauly. His address is Youngstown, Ohio. There are others of whom similar information may be obtained. Lots of 'em. We'll tell you about them later.

Rock Products

355 Dearborn Street, CHICAGO

PERFECTION IN BLOCK MAKING*If you wish to attain this you should combine these three important features:***Wet Process, Face Down,
Damp Curing.**

The PETTYJOHN INVINCIBLE Machine does this, and is the only machine that does. Tandem Invincible makes two blocks at once. Price \$65.00 and up. Single Invincibles, \$35.00 and up. With our Triple Tier Racking System green blocks can be stacked three high direct from machine with inexpensive home-made rigging. Plans and blue prints free to customers. It economizes space, reduces off-bearing distance and above all insures slow, even, damp and perfect curing and bleaching.

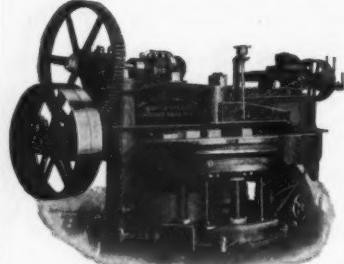
Write for our latest edition of "Stone Making," a book of valuable data, just off the press—FREE.

THE PETTYJOHN COMPANY

614 North Sixth Street Terre Haute, Indiana

The American Sandstone Brick Machinery Co.

SAGINAW, MICH.

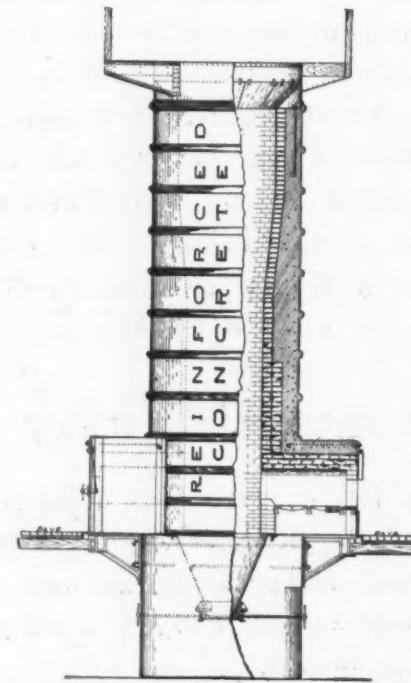


Improved Saginaw Rotary Press.

Built either right or left handed in three sizes of capacities of 800, 1400 and 2200 brick per hour. Can be equipped with extra table for making face and fancy brick on which double pressure is exerted.

Complete Sandstone Brick Plants or Partial Equipments Installed Under Absolute Guarantees as to Capacity, Quality, and Cost of Production.

WE are the oldest manufacturers of Sand Lime Brick Machinery in the U. S. today, and have more successful plants in operation than any other Company. Why not profit by our experience? Send us samples of your sand and let us advise you as to its quality for brick purposes and what machinery you will require to produce the best results. Write for catalogue "C" describing our system in detail.

**Broomell Reinforced Concrete Lime Kiln**

Most perfect kiln in the world. Concrete is placed in steel forms, which are leased for such length of time as may be necessary. By this plan kilns superior in every way can be built at a low cost. Send for descriptive circular.

A. P. BROOMEML, Manufacturer, YORK, PENN.

Perfection at Last Attained in the Concrete Block Industry

The Perfection Power Block Machine is the only Power Block Machine on the market, making a Hollow Concrete Building Block under Heavy Pressure and at Great Speed.

Machines have been in constant use since July 1st, 1905, with practically no expense for repairs.

The machine handles sand, gravel, crushed rock, slag and coloring materials perfectly.

All materials accurately measured, thoroughly mixed and uniformly pressed under 200,000 pounds pressure.

Makes 8, 9 and 12x8x24 inch blocks in five faces, and fractional and angle blocks.

Machine can be arranged to make Two Piece and Faced Blocks if desired.

All machines delivered, set up and put in operation to show a guaranteed capacity of 60 blocks (12x8x24 inch) per hour with five men.

Blocks perfectly cured in 24 hours in Vapor Curing Kilns of our own design. Full details, catalog, testimonials, etc., sent upon request.

**THE PERFECTION BLOCK MACHINE CO.
SIOUX FALLS, SOUTH DAKOTA.****Buffalo Brick Clamp****Will Pay
for Itself**

In three days by handling brick over the old method.

By saving twenty-five per cent. time unloading a car of brick.

By not making a mistake in the count, as they can be adjusted from four paving brick to twelve regular.



THE ONLY TOOL TO HANDLE BRICK

Manufactured by
Mostberger-Langner Iron Co.
876-890 S. Division St., Buffalo, N. Y.

By saving from 50c to \$1.00 on every thousand pressed brick by not chipping.

Pavers save thirty-three per cent. by carrying bricks from curb to paver instead of wheeling them.

Takes from four paving brick to twelve regular.

**Simpson Porches
Are Easy to Sell****BECAUSE:**

They are artistic

They are symmetrical

They are everlasting

They are inexpensive



Simpson Molds produce the columns and other ornamental work without the use of skilled labor.

Send for our Porch Book, which is full of ideas and illustrations. Enclose your business stationery.

The Simpson Cement Mold Co.

140 East Spring Street, Columbus, Ohio

Tell 'em you saw it in ROCK PRODUCTS

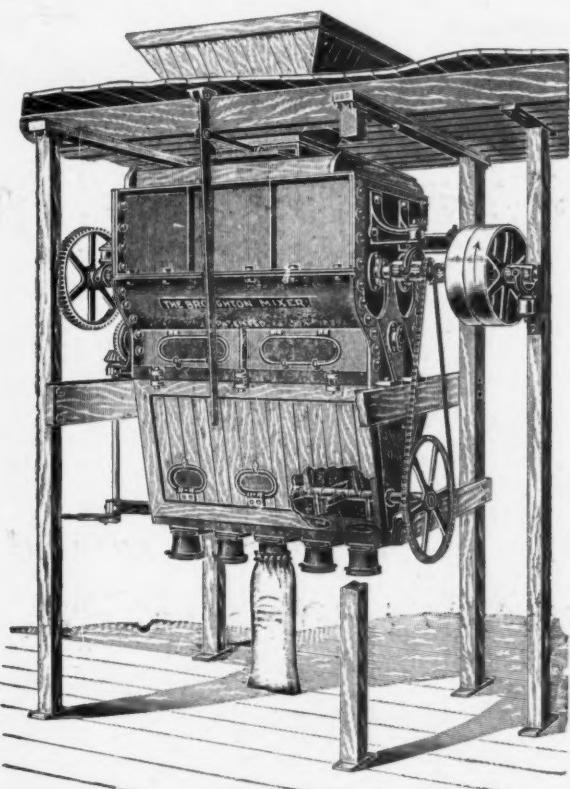
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The most thorough and efficient
Mixers of Plaster, Cement and
Dry Materials. Send for Circular.

W. D. DUNNING, Water St., Syracuse, N.Y.

Sand-Lime Brick Machinery

OUR Sand-Lime Brick Machinery is at least a little better than any other. We have testimonials to show it. We build it all in our own factory and are sure of its quality. We are the only firm doing this. We will design and equip your entire plant or will sell you parts of your equipment. Our catalog describing and illustrating our full line will be sent upon request.

We also build a full line of machinery and appliances for making Clay Products, Cement and Pottery, Dryers and Dryer Apparatus.

Everything we sell we make. We therefore know its quality to be right.

**The American Clay
Machinery Company**

WILLOUGHBY, OHIO, U. S. A.

Tell 'em you saw it in ROCK PRODUCTS

Track AND Cars



OUR STEEL CARS

Stand in a class by themselves. They are manufactured by special machinery and combine the latest ideas of design and construction. We are in a position to build special material.

LARGE STOCK of Industrial Track, Frogs, Switches, Turntables, complete track layouts, cars etc. Prompt shipment of all equipment. Our Catalogue 17 is full of illustrations and gives dimensions and other valuable information—It will be sent on request.

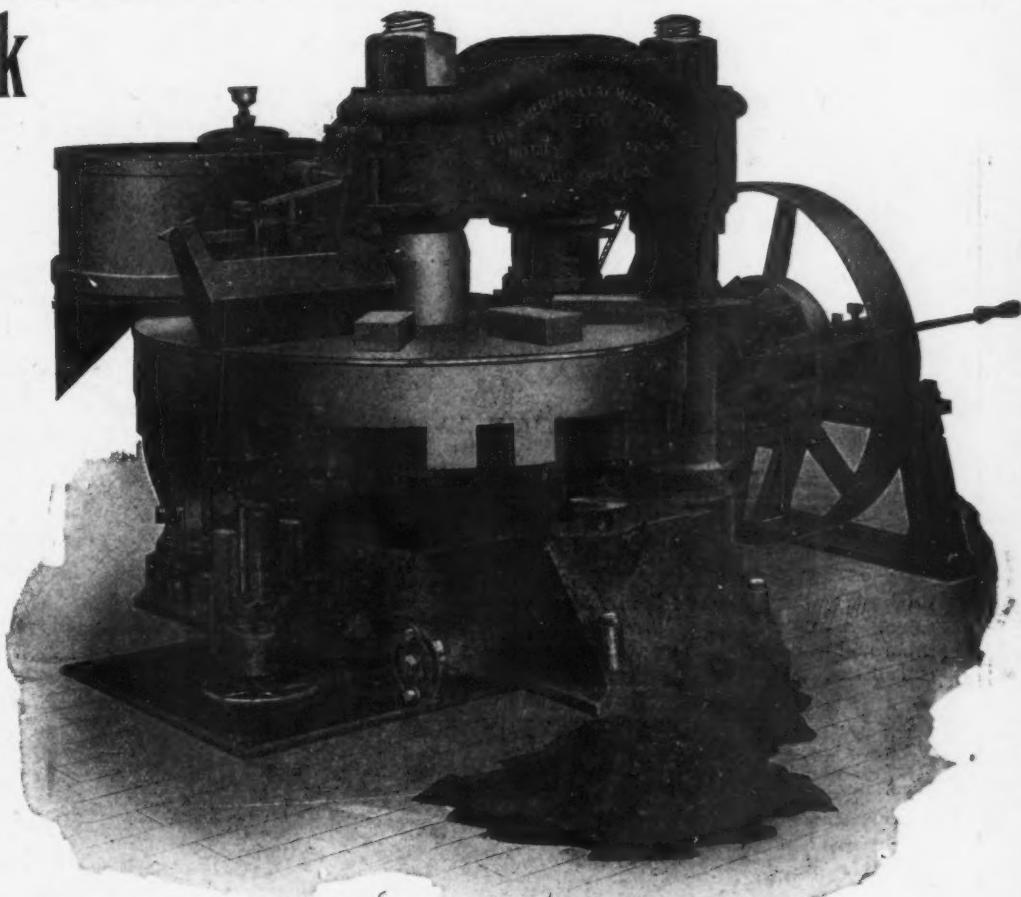
RAILROAD SPECIALISTS FOR ALL INDUSTRIES.
ERNST WIENER
•COMPANY•

196 Fulton St., NEW YORK, N. Y.

Agents for Industrial Locomotives for the Baldwin Locomotive Works.

BRANCH OFFICES:

Boston 141 Milk St.	Chicago, 1540 First National Bank Building	Pittsburg
Los Angeles, Cal. 106 W. 3d St.	Denver, Col. Cooper Bldg.	419 Park Bldg.
Norfolk, Va. 160 Water St.	San Francisco, 208 Second St.	St. Louis, Mo. 143 Security Bldg.



**WE BUILD
CARS
FOR**



**QUARRIES,
MINES,
CEMENT
WORKS
AND
GENERAL
USE**

No. 217-E
Side Dump Car
Equipped with Motor



No. 277
Steel Mines and Quarry Car



No. 145-C
Pressed Steel Top, Ball Bearing
Turntable; Patented

**SWITCHES,
FROGS**



No. 600
Steel Dumping Bucket

**RAIL,
TURNTABLES**

**THE ATLAS CAR & MFG. CO.
CLEVELAND, OHIO.**

GIANT PORTLAND CEMENT



An unsurpassed record
of 25 years.

(Send for our booklets.)

**American Cement Co.
PHILADELPHIA**



The Atlas Portland Cement Co.
Portland
ATLAS
CEMENT
30 BROAD ST. NEW YORK

None Just as Good.

The Atlas Portland Cement Co.
Portland
ATLAS
CEMENT
30 BROAD ST. NEW YORK

None Just as Good.

Everyone knows the attractiveness and value of concrete as a building material, but not everyone knows the importance of getting the right brand of cement.

ATLAS PORTLAND CEMENT

produces uniform work of the best quality. It is not good in one spot and bad in another; it is all good, all equally good, all the same. It produces a building as permanent, lasting and durable as stone. It gives you a one-piece house, every inch of which is fire-proof and sanitary. It is a delightful building material, a logical one and a typical American one. Only be sure you get the right cement—ATLAS—the cement of which the United States Government bought 4,500,000 barrels for use in building the Panama canal.

SEND FOR OUR BOOKS ON CONCRETE CONSTRUCTION

"Concrete Houses and Cottages," Vol. I—Large Houses, \$1.00;	"Reinforced Concrete in Factory Construction," delivery charge, -	\$0.10
"Concrete Country Residences" (out of print), -	2.00 "Concrete in Railroad Construction," -	1.00
"Concrete Cottages," -	sent free "Concrete in Highway Construction," -	1.00
"Concrete Construction About the Home and on the Farm," -	sent free "Concrete Garages," -	sent free

If your dealer cannot supply you with ATLAS, write to

THE ATLAS PORTLAND CEMENT CO., 30 Broad Street New York City

LARGEST OUTPUT OF ANY CEMENT COMPANY IN THE WORLD—OVER 50,000 BARRELS PER DAY.

Tell 'em you saw it in ROCK PRODUCTS